

METHODS DEVELOPMENT

STRAIN CHANGE REPORT. A-82 STRAIN, MARCH-NOVEMBER, 1982.

I. Introduction.

This report presents an overview of the rearing of the A-82 strain in Methods Development. The time period covered is from the end of March, 1982, when the strain was received from ARS, to the beginning of November, 1982, when the strain change was completed. The objectives of this report are: a) to briefly point out the difficulties that were encountered in rearing the new strain; b) to discuss the impact of these problems on rearing and the program; c) recommend changes that are needed to resolve and prevent these problems.

II. Major problem areas and their impact.

1.- Lack of separation between strain-change and testing programs.

By far the broadest and most consequential problem in Methods was the operation of a strain change using both experimental and mass rearing programs (equipment, personnel, and facilities) with no distinction between the two. The use of the experimental suites together with the larger mass-rearing areas resulted in a chaotic blend of mismatched equipment (small cages and long oviposition vats, large cages in a small colony, 220-volt wiring 110-volt equipment, etc.). These mismatches made it impossible to implement a standardized set of rearing procedures, essential for efficient and reliable production. Moreover, all personnel and facilities were committed to the strain change at the expense of a testing program. From March, 82 to Nov. 82, Methods Development conducted virtually no testing because all of its resources were assigned to rearing the new strain. Consequently, many questions and problems pertaining to the V-81 strain were never resolved. Finally, the rearing of a new strain and testing with the old strain could not be done safely in our facility because no security barrier existed to prevent interbreeding.

2.- Non-functional facilities and equipment.

The strain change was carried out under the following circumstances:

- a) A single room for 1st and 2nd initiation with totally unpredictable temperature and humidity conditions. Temperatures often exceeded 105°F and contributed to high larval mortality.
- b) An old, unreliable diet-mixing machine which broke down numerous times. Liquid diet had to be transported in carts from Production, causing undue maneuvering, spillage, settling and irregular feeding of the larvae. A sharp drop in larval weight in late September and October 1982 was associated with a prolonged mixer breakdown.
- c) Lack of a larva-collection system.
Larvae were swept up from the floor with brooms and dustpans. Aside from excessive handling, considerable losses occurred from larvae crawling into drains and being crushed underfoot.

- d) Unpredictable temperatures and humidities in all rooms except the large larva-rearing floor. The immediate consequences of incorrect temperatures are obvious: abnormally slow or fast development, mortality, and in any case a breakdown of the normal schedule of rearing procedures.
- e) A new oviposition room without any heating/cooling or humidifying equipment. Electrical connections in this room were non-functional until very late in the strain change.
- f) No in-plant facilities for record keeping, desk work, or bench work.

3.- Disorganized crews, no standardized procedures.

Because of the situation described above the rearing of A-82 was a continuous process of coping with and adapting to unsuitable conditions. This in turn implied that a unified system of rearing procedures could not be enforced. The end results were:

- a) A poor characterization of the new strain prior to mass rearing in Production. It was impossible to develop good rearing specifications and recommendations under such unstable conditions.
- b) Less than optimal production during the strain change.

4.- "Borrower" status.

All of Methods' fly cages, racks, pans, etc., were borrowed from Production. On several occasions, Production encountered scarcities of certain items, which were then "re-claimed" from Methods' inventory. It is not feasible to maintain a stock of highly functional equipment when it is periodically being cycled through Production, where Methods cannot control its upkeep. Moreover, it is difficult to execute the rearing activities of a strain change when the availability of equipment is determined by Production.

III. Recommendations.

- 1.- It is necessary to create separate programs for the strain change and for in-plant rearing and quality control. If Methods is to conduct the tests that are needed for advancement of the program, it must maintain a continuous testing program and cannot commit all of its resources to the strain change alone. Each of these programs will require separate personnel assignments and facilities.
- 2.- We propose the establishment of a sophisticated strain-change facility utilizing all of Methods' space except the Blue and White suites. Improvements in the facility itself should include; a) closing and sealing the present entrance to Methods and building a separate security entrance on the East side, to provide new-strain security; b) installing new diet mixing equipment outside security and piping the media into the strain change area; c) dividing the 1st initiation room in two parts in order to provide a 2nd initiation room; d) installing a pipe and pumps to carry liquid media from Production to the strain change area as a back-up to our mixing equipment; e) building an office in the present entrance hallway for record-keeping, bench and desk work pertaining to the strain

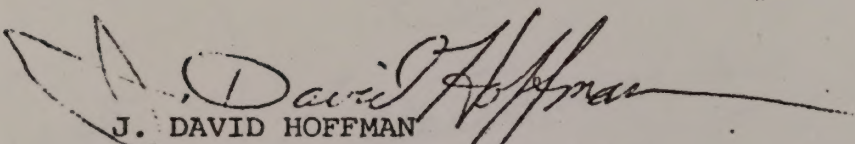
change (daily reports, work orders, dissections, etc.); f) a thorough reconditioning of all heating, cooling and humidifying equipment. Immediate additions in equipment should include: a) new diet mixer, holding tanks, and delivery system; b) a surface-mounted larva collection and delivery system; c) a full complement of standard rearing equipment (fly cages, trays, racks, etc.).

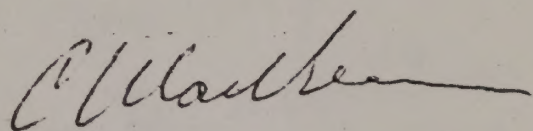
- 3.- We propose that a pre-irradiation quality control and testing lab be set up in the Blue and White suites. These can serve well for small-scale rearing, testing and pre-irradiation quality control with the strain currently in production. Rearing activities in the suites should be limited to small fly cages (quality control type) and experimental-size larval vats to allow adequate replication of test variables and easy handling of equipment. The suites are simply not functional with full-scale rearing equipment. Pupation and pupae maturation can be accommodated well in one of the colony rooms and in large incubators; this will eliminate the persistent problem with temperatures and humidities in all the different rooms in the suites. Once the results of a test are obtained on a small-scale, further testing with regular production-size equipment can be done in the strain change area between strain changes.

Modifications to the Blue and White suites should include: a) sealing both suites off from the strain-change area and making a new doorway on the south side (blue colony room); b) connecting the two suites through doorways between the colony rooms and the former "5 1/2 day" rooms; c) removing certain non-structural walls to simplify the floor plans of the suites and allow better placement of equipment; d) diet delivery from new mixing installation, (also serving the strain change area).

Immediate equipment needs for the testing laboratory are: a) work benches, counters, and cabinets; b) incubators, balances, microscope and other testing equipment.

This concludes our general recommendations. We believe that it is essential that two separate programs be created for the strain change and for quality control and testing and that each have a highly functional facility. We are presently allocating Methods' personnel to the four programs we operate (see attached organizational chart) and we are impressed with the quality of our human resources. However, we must obtain better physical facilities and equipment if we are to utilize these resources fully, achieving the numerous tasks that the eradication program requires of Methods Development. We must act immediately if we are to take full advantage of the time before the next strain change to implement the structure and function of all four program areas in Methods Development.


J. DAVID HOFFMAN
CHIEF OF METHODS DEVELOPMENT.


CHARLES MacVEAN
SUPERVISORY ENTOMOLOGIST.

Mar 1, 1983

Rick Edwards, RC
112 E 18th St
Albany Regional Health Center
Albany, Calif
FTS 444-3230
444-3380 (lab)
444-3201

RT ticket - #452
25 to MEAL
Dep April 18 -
" 19 -
" 20 -
May 1 -
Return to Missouri
on PM 4/18
Lindsey & Jeff
Traverse, Texas.

Call Lindley
April 15, 1983

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United States
Department of
Agriculture

Animal and
Plant Health
Inspection Service

Harold Brown
O.H. Matan

Subject: Swormlure Attractancy

Date: March 2, 1983

To: MVZ. MOISES VARGAS TERAN
DR. H. C. HOFMANN
ENTOMOLOGOS ASESORES

This 10-day trial on Swormlure attractancy was conducted in the Cd. Altamirano area, Guerrero, Mexico. It was directed toward replicating a 9-day trial conducted in the same area in December of last year.

The attached map profiling the trap sites defines a circular overlay that essentially shows where some of the traps were not consistent with the basic test design. However, with the exception of a few traps being moved a short distance, we were consistent in locating the traps on the same sites employed last December.

Sterile flies were released over the test area on February 8th and 14th. A different grid was used each time. Both grids, however, well covered the entire test area(see attached map).

On Friday, February 11, 1983, at 1200 hrs., we ground-released a total of 48 boxes of flies, 40 of which contained marked flies. These flies were trucked from Guadalajara to the distribution center in Uruapan, Michoacan, then flown to Cd. Altamirano. Along with the flies we also received the Swormlure(SL-4) that was used on this test. This particular Swormlure was eight days old when we got it.

The condition of the flies at the time of release clearly indicated the flies had not enjoyed their ride. The foodstuff in most of the boxes was scattered all about inside and this, needless to say, had created a somewhat sticky situation for the flies. The boxes, at the time of release, also contained a high mortality rate(when compared to the Mazatlan load) which can be attributed to the insect being crushed inside the box. In making a very crude estimate, based solely on observation, approximately 5-10% of the released flies could be considered non-flyables at the time. The flies, however battered, both flyable and nonflyable, appeared robust when released.

Outlined below are both the test design, as well as the data gathered from the test.

Set-up: 24 wind-oriented traps, 6 in each of four different directions leading from the release point(see attached map)
In each direction, traps approximated from release point as follows: 1 at 1 kilometer; 2 at 2 kilometers(400-500 meters apart); 3 at 3 kilometers(300-500 meters apart)

Bait: Swormlure 4 (SL-4)

Quality Control-information obtained from seven samples(boxes) taken at the time of release-

Box	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
Dead at Release	13	38	5	17	12	46	8
Emergence	820	742	916	945	840	797	918
Non-Emergence	150	183	191	147	163	167	181
Emergence after Release	<u>68</u>	<u>26</u>	<u>64</u>	<u>75</u>	<u>64</u>	<u>54</u>	<u>61</u>
Pupae	970	925	1,107	1,092	1,003	964	1,099

Released 48 boxes(only 40 contained marked flies)
 Pupation 1/30/83
 Irradiation 2/5/83
 Emergence 2/8/83
 Release Date 2/11/83

Total Pupae(40 boxes) 40,914 or 1022.85 per box
 Total Emergence(40 boxes) 34,160 or 854.00 per box(83.48%)
 # Dead Flies at Release 19.86 " " (2.33%)
 # Flies Emerged after Release 58.86 " " (6.89%)

Total fly collection on a by-day basis:

Day	# of Traps in Use	Screwworms		Other Blowflies
		♂	♀	
1	24	*3	**13	2
2	24	11(1)	71(15)	6
3	24	41(14)	**175(45)	12
4	23	20(3)	*113(22)	10
5	24	***63(7)	**223(17)	13
6	24	28(1)	141(10)	7
7	23	25(1)	192	7
8	23	10	*61	2
9	24	5	24	3
10	<u>24</u>	<u>1</u>	<u>*20</u>	<u>5</u>
	237	207(27)	1,033(109)	67
		****	*****	

Note: The numbers in parenthesis(#) reflect marked flies and are already included in the total number. The asterisks * reflect the wild flies captured and, also, are already included in the total number.

Flies per Trap(male) 0.74
 # " " (female) 3.86
 # " " (other) 0.11
 # " " (male-marked) 0.46
 # " " (female-marked) 0.02
 # " " (male-wild) 0.04
 # " " (female-wild) 0.28

Distances form the release point where the flies were captured:

Perimeter 1 - 1 kilometer from release point

Male Screwworm Flies	28	or	15.56%	of total catch
Female Screwworm Flies	162	or	17.53%	" " "
Male Screwworm Flies(marked)	10	or	37.04%	" " "
Female Screwworm Flies(marked)	49	or	44.95%	" " "

Perimeter 2 - 2 kilometers from release point

Male Screwworm Flies	46	or	25.56%	of total catch
Female Screwworm Flies	247	or	26.73%	" " "
Male Screwworm Flies(marked)	15	or	55.56%	" " "
Female Screwworm Flies(marked)	41	or	37.61%	" " "

Perimeter 3 - 3 kilometers from release point

Male Screwworm Flies	106	or	58.89%	of total catch
Female Screwworm Flies	515	or	55.74%	" " "
Male Screwworm Flies(marked)	2	or	7.41%	" " "
Female Screwworm Flies(marked)	19	or	17.43%	" " "

Note: Wild flies are included in the sterile fly total.

During our stay, temperatures varied from the low 60^osF to the low 90^osF. The relative humidity, which was recorded at mid-morning and again at mid-afternoon, showed extremes of 50% and 17%.

This 10-day trial was conducted by Angel Soto, a biological technician from Mexico City, and myself.

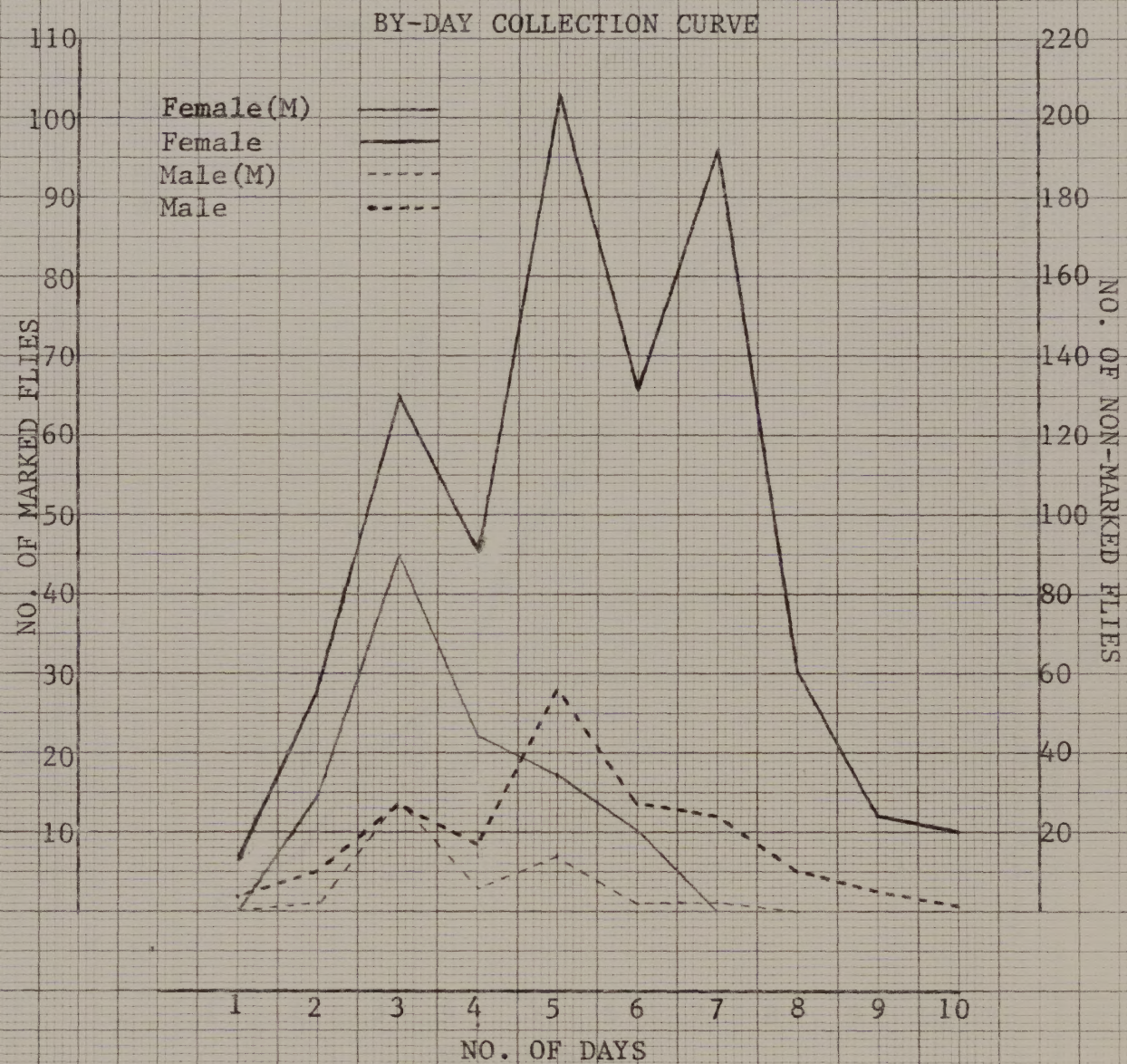
Lizandro Gonzalez
Biological Technician

Distribution: W. H. Sudlow, J. C. Bruce, Angel Soto,
Dr. Harold Brown, Dr. Hugh Graham

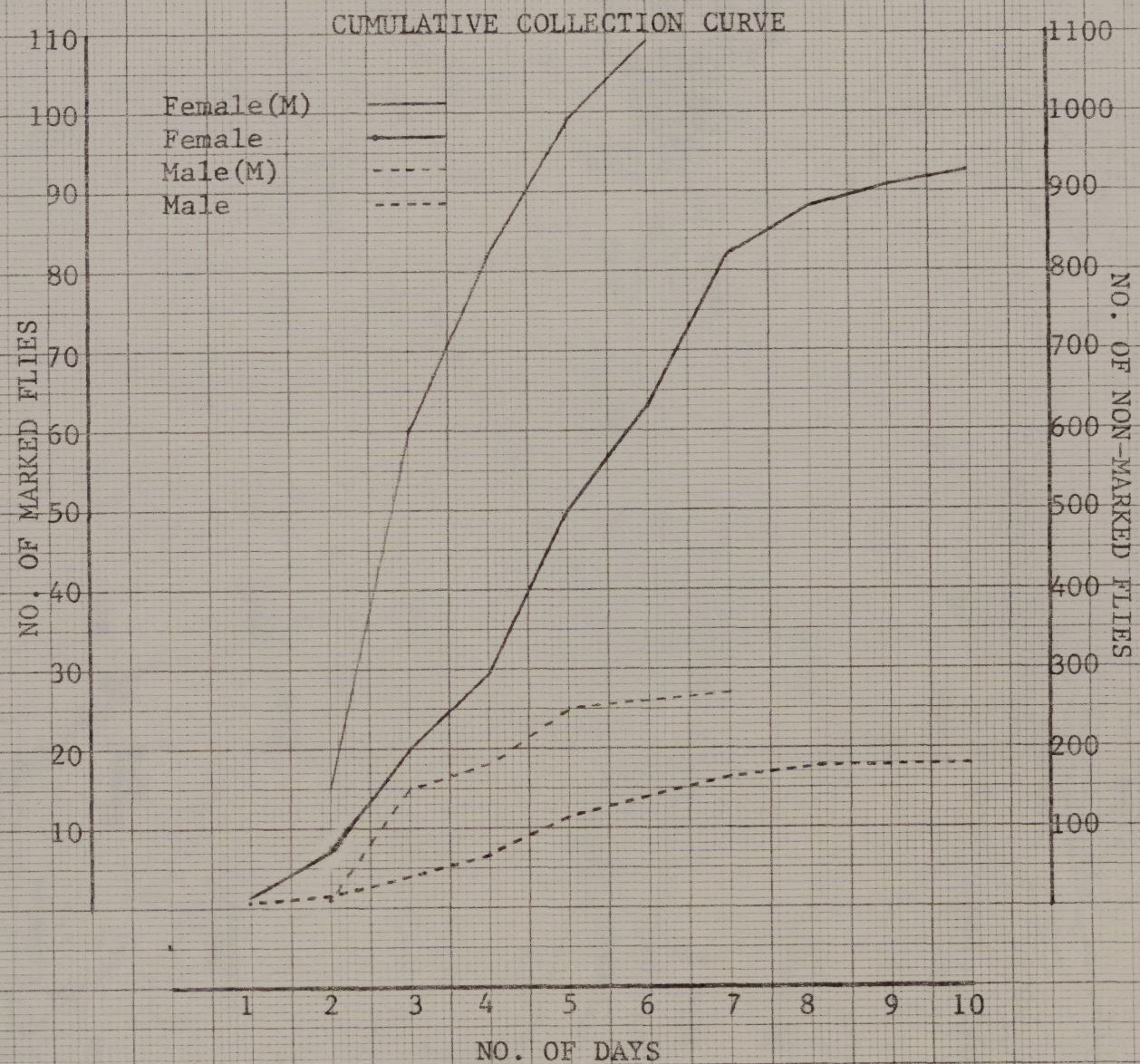
DAILY SCREWORM COLLECTION

DAY	1		2		3		4		5		6		7		8		9		10	
TRAP	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
# 1	0	0	0	0	0	2	0	1(1	0	1	0	0	0	0	-	-	0	1	0	1
# 2	0	0	0	2	3(1	11(4	2	10(3	12	29(2	3	17(2	2(1	28	1	6	0	1	0	6
# 3	0	0	0	0	1(1	0	0	0	0	1	0	4	0	8	1	3	0	0	0	1
# 4	*1	**6	3	14	1	14(3	0	5(2	3	*8(1	3	26(2	9	41	1	14	0	0	0	0
# 5	0	1	0	3	0	1(1	0	0	0	1	1	1	0	10	3	10	0	0	0	0
# 6	0	0	2	9	2	1	0	1	*4	*11(1	1	11	2	20	0	0	0	4	0	*3
# 7	0	0	0	0	0	3(2	0	0	*1	4	0	0	0	0	0	0	0	0	0	0
# 8	0	2	0	1	0	4	-	-	0	1	0	2	0	3	0	1	1	0	0	1
# 9	0	0	0	1	0	5(1	2(1	3	*3(1	11(2	0	1	0	2	0	0	0	0	0	0
# 10	0	0	1	3(1	3(1	12(4	1	1	0	0	5	5(1	8	24	1	5	3	3	0	1
# 11	0	0	0	0	0	5(1	0	0	0	4	0	2	0	0	0	0	0	0	0	0
# 12	0	0	0	1	0	0	0	3	1	9(1	0	0	0	6	0	2	0	1	0	0
# 13	0	0	0	7(6	2(1	4(3	1	8(1	0	6(1	1	12(2	0	0	0	0	0	0	0	0
# 14	0	0	0	3	9(6	34(13	6(2	18(4	4	14(4	0	2	0	0	0	0	0	1	0	0
# 15	0	0	0	1	0	1	0	1(1	0	3(1	0	1	0	1	0	2	0	1	1	0
# 16	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	*1	0	0	0	1
# 17	1	0	0	4	0	*3	0	0	0	1	0	1	0	0	0	0	0	0	0	0
# 18	0	0	0	0	0	0	0	2	0	1	0	0	0	5	0	0	0	0	0	2
# 19	0	1	5(1	14(8	10(3*	46(10	4	*33(10	11(4	53(3	3(1	8(2	0	2	0	2	0	0	0	2
# 20	0	0	0	1	5(1	8(2	1	4	2	3	0	3	-	-	0	0	0	0	0	0
# 21	1	0	0	2	0	3(1	0	3	1(1	6	0	4(1	0	1	0	1	0	0	0	1
# 22	0	0	0	0	3	6	1	6	2	6	9	36	3	38	2	12	0	2	0	0
# 23	0	1	0	2	1	4	1	3	9	22	0	0	1	0	1	0	0	2	0	1
# 24	0	0	0	2	1	8	1	11	10(1	28(1	2	5	0	3	0	2	1	8	0	0
	3	13	11	71	41	175	20	113	63	223	28	141	25	192	10	61	5	24	1	20
			(1)	(15)	(14)	(45)	(3)	(22)	(7)	(17)	(1)	(10)	(1)							
	*	**				**		*	***	**						*				*

NOTE: Each asterisk-- represents one wild fly
 The numbers in parenthesis-(#)- represent marked flies
 Trapping took place February 12-21, 1983



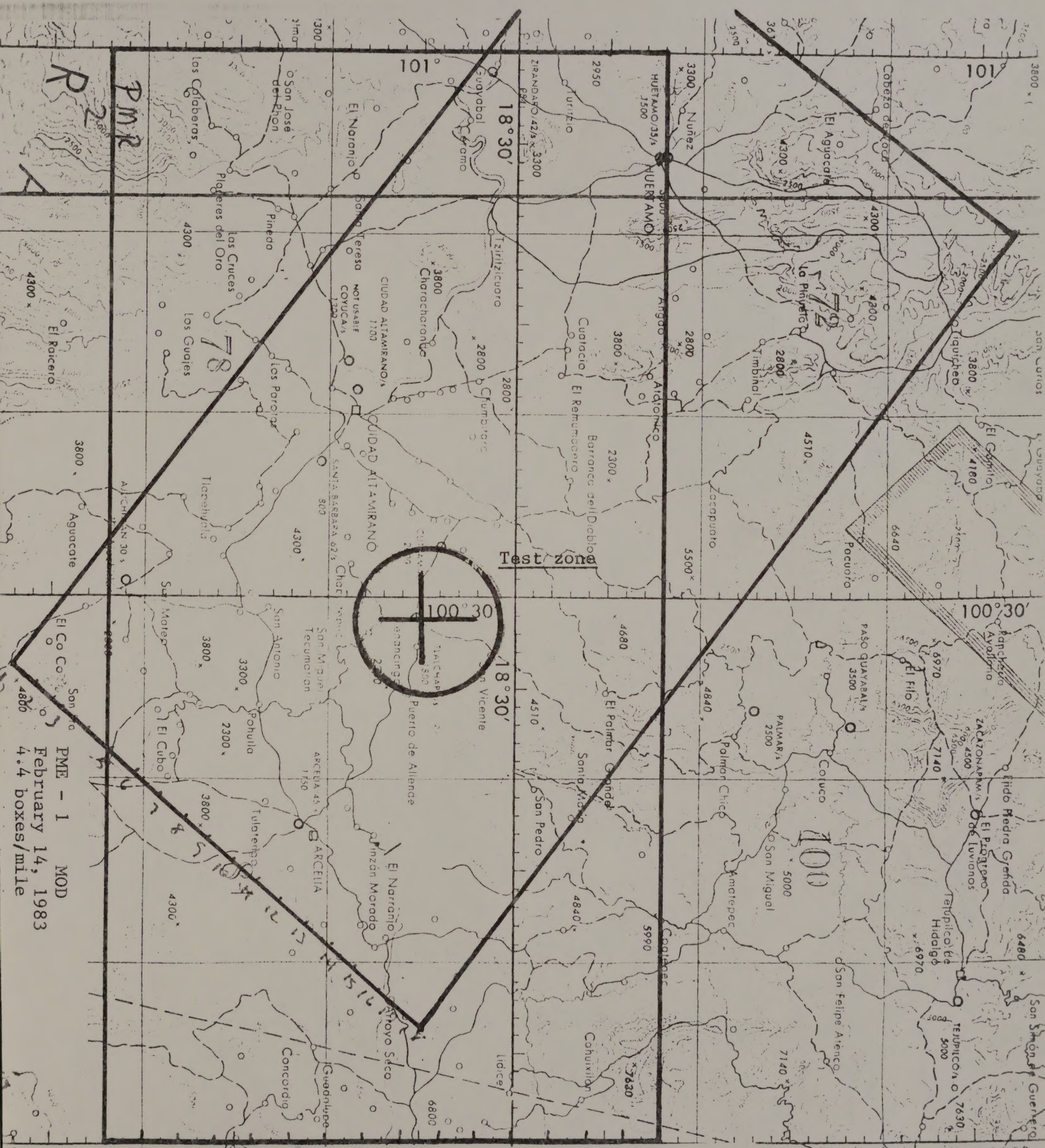
1 10-Day Trial
 February 12-21, 1983
 Marked Fly ground-release February 11
 Regular Releases February 8 and 14
 (M) = Marked Flies



1 10-Day Trial
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 Regular releases - February 8 and 14
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2 grids were employed to treat the area where the test took place
the date of the dispersal and the amount of boxes dropped are indicated on map



PME - 1
February 8, 1983
4.4 boxes/mile

PME - 1 MOD
February 14, 1983
4.4 boxes/mile

O. H. Graham



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

March 2, 1983

Marinella Nicolson
Gower Medical Publishing
Limited
Middlesex House
34-42 Cleveland Street
London W1P 5FB

Dear Ms. Nicolson:

I appreciate your invitation to contribute photographs to the forthcoming book, "Equine Parasitology". Unfortunately our laboratory is in the process of being relocated into Mexico and the few photographs that we have had in the past seem to be lost. Probably the best present source would be the Information Division of USDA-APHIS. May I refer you to the following person:

Mr. Ken Goodrich
USDA-APHIS-Information Division
Veterinary Services Branch
Room 1144, South Building
Washington, D.C. 20250

Sincerely,

O. H. Graham

O. H. GRAHAM

cc:

Ken Goodrich (w/copy of Incoming)



United States
Department of
Agriculture

Animal and
Plant Health
Inspection Service

Hugh Graham

Subject: Swormlure Attractancy

Date: March 2, 1983

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Lizandro Gonzalez
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Distribution: W. H. Sudlow, J. C. Bruce, Angel Soto,
Dr. Harold Brown, Dr. Hugh Graham



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas
Area

Screwworm Research
Apartado Postal #544
Tuxtla Gutierrez, Chiapas
Mexico

March 7, 1983

SUBJECT: Research/Methods Development Meeting;
Tuxtla Gutierrez, April 21-22, 1983

TO: All Scientists in Screwworm Research

March 3, 1983

Dr. Ralph Bram called last week to discuss the need for a group discussion of all aspects of the present practice of changing strains in the mass production plant about once each year. Commission and APHIS personnel have been quite concerned about the negative impact on the eradication program which occurs when a strain is changed in November and some have also questioned the need to change each 12 months.

SUBJECT: Detail to work with ARS

TO: Mr. William H. Sudlow
Mission, Tex.

Arrangements have been made for such a meeting to be held in Tuxtla Gutierrez on April 21-22, 1983. As per telephone conversation with Dr. Ralph Bram on February 25, 1983, you are hereby instructed to assist Harold Brown, ARS, Weslaco, Texas, and Dr. Jim Mackley ARS, Tuxtla Gutierrez, Chiapas, Mexico on a "Sound Attractant" project. It was agreed that you would spend from one to one and a half weeks full time each month working on this project. It was further agreed that you could make trips to Tuxtla Gutierrez, Chiapas, in conjunction with the project as required. It was also agreed that should a screwworm outbreak occur in the United States or near the U.S. border in Mexico that you could be pulled off the project if necessary to assist in combating and eliminating the outbreak.

[Signature]
James E. Novy
O. H. Graham
Location/Project Leader

cc: R. A. Bram
J. R. Job
R. L. Har
H. C. Hoff
Dave Hoff
H. E. Brown
C. J. Whitten
cc: Dr. Hugh Graham
Dr. Floyd Smith
Dr. Norvan L. Meyer
Dr. Robert S. Reichard
Dr. Ralph Bram

M. Beroza & Associates, Inc.

CONSULTANTS

821 MALTA LANE, SILVER SPRING, MARYLAND 20901

Phone (301) 593-2103

March 7, 1983

Dr. Hugh Graham
Screwworm Research Moore Air Base
P. O. Box 986
Mission, Texas 78572

Dear Hugh:

Jim Mackley visited the Hercon plant at York, PA on December 27, 1982, and had the opportunity to discuss with Dr. Kydonieus and myself the possibility of improving the Swormlure pellet design using Hercon's slow-release technology.

Jim indicated that he would be talking to you on the matter and that you or he would be getting in touch with us in due course.

I continue to believe, as you do, that the Swormlure pellet performance can be much improved.

With much time having passed, I thought I would inquire whether you are still interested.

With best regards.

Sincerely,

Mort

Morton Beroza

RECEIVED MAR 14 1983



United States
Department of
Agriculture

Agricultural
Research
Service

Western Region

California-Hawaii Area
Tropical Fruit & Vegetable
Research Laboratory
P. O. Box 2280
Honolulu, Hawaii 96804

March 9, 1983

IN REPLY
REFER TO: MS #4343

Ms. Teresa Carson
Managing Editor, The Amer. Naturalist
Storer Hall
University of California
Davis, CA 95616

Dear Teresa:

I have been informed that the McInnis et al. manuscript on screwworm cytogenetics which was submitted to the Annals of the E.S.A. has been accepted and will be published within 6-12 months. The editor involved, Dr. Ralph Howard, could not be more specific on a publication date. Please let me know the status of MS #4343, including whether or not it may be published with the above McInnis et al. paper in press, though not published. Thank-you very much.

Sincerely,

03/17/83

Don McInnis

DON MCINNIS
Research Geneticist

cc:
O. H. Graham ✓

To Pete -

Del Var is referring to rejection by Annals; he may be slightly confused about the present status of this mss.

24 Jones & I talked to Dr. Jacqueline Robertson, Editor of JSE, and she said that your mss. went to peer reviewers on 02/24/83. She further volunteered that she expects the mss. to be accepted & suggested that you & Del Var make any desired revisions at the same time that you revise to take care of peer reviewer comments. Look for your mss. over to him on

RECEIVED MAR 17 1983



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region

Biometric Unit
P.O. Box EC
College Station, TX 77840

March 11, 1983

SUBJECT: Manuscript: Longevity and Mating Capacity
of Male Screwworms

TO: Dr. O.H. Graham
Research Leader

I can also understand why this manuscript was rejected. I feel bad that it was sent out like it was.

Where do we go from here? I think the data can be presented in a different way which should help the reader understand the research. There also appears to be some contradiction in the text of the manuscript.

I would like to look at the data and rework it, if possible. Pete and I could go over it in April. Perhaps a rewrite of the paper could be completed at that time. I would like to discuss this with you on Monday, March 21.

03/17/83

Del Var
H. DelVar Petersen
Regional Biometrician

To Pete -

1/ Del Var is referring to rejection by Annals; he may be slightly confused about the present status of this mss.

2/ Josie & I talked to Dr. Jacqueline Robertson, Editor of JEE, and she said that your mss. went to peer reviewers on 02/24/83. She further volunteered that she expects the mss. to be accepted & suggested that you & Del Var make any desired revisions at the same time that you revise to take care of peer reviewer comments. Looks like you're over the hump on this one - Hugh



United States
Department of
Agriculture

Agricultural
Research
Service

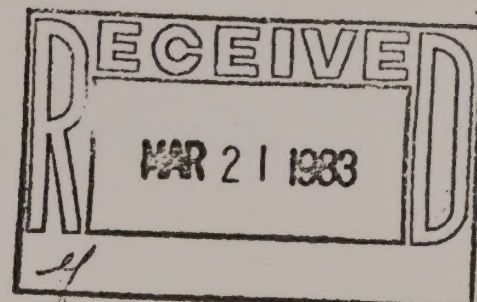
Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

March 17, 1983

SUBJECT: Non-Mandatory RPE - Richard D. Peterson II

TO: Dr. J. R. Johnston
Area Director
P. O. Box EC
College Station, TX 77841



I recommend that you submit a new case write-up for Richard D. Peterson II to the Personnel Evaluation Committee. Since his case was reviewed in November, Dr. Peterson has had several scientific manuscripts either published or accepted for publication and has added to his research accomplishments. He has worked quite closely with Dr. R. L. Harris in the development of a new screwworm larval diet and they have made substantial progress. In January, he collected an unusually large number of egg masses in a remote area of Mexico and successfully established over 100 isofemale lines in the laboratory in Tuxtla Gutierrez.

In my opinion his new case write-up clearly shows that he is qualified for Research Entomologist, GS-12.

O. H. Graham

→ O. H. GRAHAM
Location/Project Leader

*Sent
3/23/83*

3/21/83

TO: Francisco Salinas

I concur in Dr. Graham's recommendation that Dr. R. D. Peterson be evaluated (nonmandatory) on August 31-September 1, 1983. Please acknowledge below your approval of this review date.

J. R. Johnston

J. R. JOHNSTON
Area Director

Francisco Salinas

Yes

No

Date



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78596

March 18, 1983

Dr. Morton Beroza
821 Malta Lane
Silver Spring, Maryland 20901

Dear Mort:

Your letter of March 7 has prompted me to write a letter that should have been written several weeks ago; extensive travel in Mexico is my only excuse for not having written sooner. Jim Mackley prepared an excellent report of his visit with you and Dr. Kydonieus and it has by now circulated to several interested persons in ARS and APHIS. Both Jim and I very much appreciate the time and effort involved in explaining the Hercon slow-release technology to him.

Ever true to our bureaucratic tradition we must now confer with our associates before a decision can be reached as to whether or not to attempt to build slow-release into the SWASS pellet technology. A date has been set and on April 22, we will have an opportunity to discuss the matter in detail and prepare recommendations to the managers of the eradication programs. I wish we could move a little faster on this but prudence suggests that coordination be complete.

So, yes, we in ARS continue to be very interested in the potential of slow-release as a means of improving SWASS, but I do not know whether or not USDA will invite Hercon to submit a specific proposal. Hopefully we will have a better idea after April 22.

With best personal regards,

Sincerely,

O. H. GRAHAM
Location/Project Leader

cc:

J. W. Mackley
H. E. Brown
R. A. Bram

RECEIVED MAR 2 9 1983

UNIVERSITY OF THE WEST INDIES

DEPARTMENT OF MICROBIOLOGY

MONA, KINGSTON 7

JAMAICA, W.I.

CABLE AND TELEGRAPH
"UNIVERSITY"
PHONE P.B.X. 76621

OUR REFERENCE

23rd March, 1983

Dr. O.H.Graham,
Research Leader,
Screwworm Research,
Box 986,
Mission,
Texas, 78572.

Dear Hugh,

I hope that you are well and that work at Mission (if ther is any left), and at Tuxtla, is providing you and your team with much satisfaction.

Please see the attached communication. Last summer, I visited Suriname on a prefeasibility study on screwworm management for the IICA. As you can see they are having problems but no attempts have been made here in the Caribbean as yet of manufacturing SWASS locally. I would thus be grateful if you would give me, or to Dr Lieuw A Joe, Chief, Veterinary Inspection, Paramaribo, Suriname, what is estimated to be the current costs of SWASS or bait stations, if you think they may be useful in the humid tropics. I don't know what your objectives are but this may be a location for some collaborative field trials on the equator. Anyway, I would be glad to get your views about the management of screwworm in such a focus.

How is research going down at Tuxtla? I hope that Jim, John and Pete are all enjoying it. Please give them my regards. How is Jim Whitten managing with his research in Fargo ? I hope that he is having more luck than I did with the process of preferentially eliminating ther females.

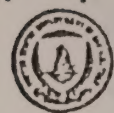
Say "hi" to Harold Browne and to everyone, - Josie and Cindy.
Please let me hear from you soon

Sincerely,



Sam

P.S. Is your book out or yet, please let me know its source



United States
Department of
Agriculture

RECEIVED MAR 28 1983

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

F & B Road
P.O. Drawer EC
College Station, Texas
77841

March 24, 1983

SUBJECT: Request for Personnel Action

TO: Personnel Officer
Southern Region
P. O. Box 53326
New Orleans, LA 70153

We request the following action for Donald E. Hopkins, Screwworm Research
Unit, Tuxtla-Gutierrez, Chiapas, Mexico

☐	Appointment	☐	Promotion
☐	Recruit	☐	Extension of Appointment
☐	Resignation	☐	Conversion
☐	Termination	☐	Change in Tour of Duty
☒	Other <u>Excepted Appt. NTE 1 year</u>		

Enclosed is the following material:

☒	SF-52	☐	KSA Sheet
☐	AD-332	☐	SEA-368
☐	Position Description(s)	☐	SF-46
☐	SF-171	☐	SF-39A
☒	Other <u>Ltr. from O. H. Graham, Subj.: Appointment of Collaborator WOC</u> <u>- Donald E. Hopkins, dated 3-18-83</u>		

We will appreciate your further handling of these documents.

J. R. Johnston

J. R. JOHNSTON
Area Director

Enclosures

cc:
Administrative Person

*see Hopkins' file
in main office for
copies of enclosures*



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Office of the
Regional Administrator

701 Loyola Avenue
P.O. Box 53326
New Orleans, Louisiana
70153

March 25, 1983

SUBJECT: Screwworm Research and Methods Development Planning
Meetings

TO: ~~Ralph A. Bram~~
National Program Staff
Beltsville, MD

This is in response to your memo of March 7, 1983, concerning the meeting scheduled for April 21, 1983, at Tuxtla Gutierrez. We acknowledge that Dr. O. H. Graham and Dr. J. W. Snow from the Southern Region will be participating in the meeting. I am assuming that Dr. Snow has submitted the necessary information for approval of his travel.

At this time we do not anticipate anyone from the Regional Office being able to participate in the meeting, in that an Area Directors Meeting is scheduled that week, and Paul Koenig may be on travel status as well.

We shall look forward to a written report on the results and any followup actions that may be deemed necessary.

ROBERT F BARNES
Acting Regional Administrator

cc:

J. R. Johnston
J. W. Snow
✓ O. H. Graham
P. Koenig



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

April 1, 1983

Dr. R. G. H. M. Liew A. Joe
Chief of Veterinary Inspection
Paramaribo, SURINAME

Dear Dr. Liew A. Joe:

Dr. S. C. Rawlins of the University of the West Indies has asked me to write to you concerning the possible experimental use of SWASS to control screwworms on a beef cattle farm in Suriname. While we are intrigued by the possibilities suggested by this opportunity, it does not appear that it would be possible for anyone from our group to participate in such a test in the foreseeable future. All of our research funds must be used to support the ongoing eradication program in Mexico and all of our personnel are similarly obligated. I regret that we cannot respond in a more positive way to your interest.

While I agree with Dr. Rawlins' assessment of the need for more information on the attractancy of Swormlure and SWASS in your country, I am also concerned about how a study might be conducted that would produce valid conclusions. Because female screwworm flies are able to move long distances, perhaps more than 300 kilometers, it is very difficult to measure the effect of treatments unless they are applied to large areas (5000 or more square kilometers).

In spite of these precautionary statements if your organization or some international group such as IICA should decide to experiment with SWASS in Suriname, we will be happy to provide whatever help we can in the form of advice or technical consultation and assessment.

Sincerely,

O. H. GRAHAM
Location/Project Leader

cc:

R. A. Bram
S. C. Rawlins
H. E. Brown



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

April 1, 1983

Dr. S. C. Rawlins
Dept. of Microbiology
University of the West Indies
Mona, Kingston 7
JAMAICA

Dear Sam:

All of us back here in Texas were glad to hear from you. The screwworm research group at Mission is now very small while the group at Tuxtla is steadily increasing in size. I was transferred to Tuxtla in January but spend some time here each month as we prepare to mothball the Mission lab. We have 4 newly hired scientists, one at Tuxtla, one at Mission, and two at Fargo awaiting travel orders to transfer to Tuxtla. John Spencer (now a married man!) came out of Mexico this month and will transfer to Fargo later this year. One of the new scientists in Fargo is a geneticist, a replacement for Don McInnis.

We appreciate the contact with Dr. Lieuw A. Joe and will write to him. We are interested in obtaining information on SWASS performance in tropical regions such as Suriname, but I am not sure we will be able to help in a substantial way. To speak in generalities, an island would be a better location for a SWASS test as it probably would not be possible to measure the influence of SWASS on a mainland screwworm population without treating a very large area (10,000 square miles?). I am presuming, perhaps incorrectly, that the 500 ha. farm, even though far from other farms, is surrounded on all sides by a stable population of screwworms which develop in wild animal hosts.

Also, we do not have funds that could be used for screwworm research in South America. As you know, travel and other costs can be quite high when field tests are carried out in a foreign country and all of our funds must be used to support the Mexico eradication program.

Harold Brown will also be writing to you and will supply some information on SWASS costs and the feasibility of shipping SWASS pellets by air freight vs. cost of manufacture in country. Best personal regards from everyone at Mission and Tuxtla.

Sincerely,

O. H. GRAHAM
Location/Project Leader

cc: J. W. Snow (w/copy of incoming)
R. A. Bram

RECEIVED APR 18 1983

April 13, 1983

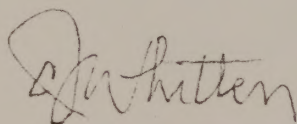
SUBJECT: Reassignment of Dr. John Spencer from Tuxtla-Gutierrez,
Mexico, to Fargo, ND

TO: Dr. K. L. Lebsock, Director
Northern States Area
St. Paul, MN

THROUGH: Dr. Claude Schmidt, Director *CHS 4-14-83*
Metabolism & Radiation Res. Lab., ARS, USDA
Fargo, ND

Enclosed are a position description, a Form SF-52, and associated documentation for a Research Entomologist to be assigned to the Screwworm Research Unit of this laboratory. Dr. John Spencer, currently assigned to the Screwworm Research Laboratory in Mexico, has been identified as a scientist with the qualifications necessary to conduct the studies of hybrid vigor and behavior of screwworm adults. Dr. Spencer has indicated a desire to be reassigned and is agreeable to being assigned to Fargo. In addition, Dr. Ralph Bram, NPS, has indicated that such a transfer is within the operational intent of the screwworm research plan.

I hope that these documents will initiate the transfer of Dr. Spencer to Fargo and that such action could be taken so as to make the transfer effective during the month of June. The research to be done is very important to our providing direct support to APHIS. Therefore, the sooner we begin, the better.



C. J. WHITTEN
Screwworm Project Leader

cc:

Dr. Spencer, Mission, TX w/o encl.

✓ Dr. O.H. Graham, Tuxtla-Gutierrez, MX w/o encl.

Dr. R. Johnston, AD, College Station, TX w/o encl.



United States
Department of
Agriculture

RECEIVED APR 27 1983

Agricultural
Research
Service

Southern Region
Southeastern Fruit and
Tree Nut Research
Laboratory

P.O. Box 87
Byron, Georgia
31008

April 25, 1983

SUBJECT: Slides

TO: Dr. Hugh Graham

Attached are 2 slides that show the field cage we discussed in detail. In fact in 1 slide Mr. Jones is actually putting the cage together. I hope that these 2 slides will assist you in assembling it. It was good to see you and the researchers in Tuxtla last week and I wish you and the screwworm program the best.

J. Wendell
J. WENDELL SNOW

Laboratory Director

Enclosure

4/27/83
Thank you for the slides. I will definitely help in do you want to see them when you next visit.
WJP



United States
Department of
Agriculture

Agricultural
Research
Service

RECEIVED APR 27 1983

Southern Region
Southeastern Fruit and
Tree Nut Research
Laboratory

P.O. Box 87
Byron, Georgia
31008

April 25, 1983

SUBJECT: Slides

TO: Dr. Hugh Graham

Attached are 2 slides that show the field cage we discussed in detail. In fact in 1 slide Mr. Jones is actually putting the cage together. I hope that these 2 slides will assist you in assembling it. It was good to see you and the researchers in Tuxtla last week and I wish you and the screwworm program the best.

J. Wendell
J. WENDELL SNOW
Laboratory Director

Enclosure

05/19/83

Wendell -
Thank a million - the slider
will definitely help - do you want
them back? We'll have the cage
up when you next visit Tuxtla -
Hugh



United States
Department of
Agriculture

Agricultural
Research
Service

National
Program
Staff

Room 302, Bldg. 005
Beltsville, Maryland
20705

RECEIVED
1 1983

April 28, 1983

Dr. O. Hugh Graham
USDA ARS Screwworm Research
Apartado 544
Tuxtla Gutierrez
Chiapas, Mexico

Dear Dr. Graham:

While there may be several reasons why screwworm colonies tend to deteriorate in size and undergo various other changes, I have often wondered if the changes may in part be directly or indirectly due to accumulative nutritional deficiencies. I cannot visualize just how such effects could occur over a period of generations but, subtle physiological and/or genetic changes may occur over a period of time.

It should not require much research to gain a good indication if nutritional deficiencies are involved. If nutritional deficiencies in the diet should be accumulative in a screwworm colony, the colony might be "revitalized" by periodically rearing the insect on an animal host. Such revitalizing effect, if it exists, should be expressed more prominently in a strain that has shown definite evidence of weight loss ~~loss of weight~~ or other changes that can be recognized such as shorter life. ~~loss of weight~~ still available, strain R81 might be used for the type of test proposed.

For such test, a small segment of the colony might be reared on an animal host for one generation. The other segment would continue to be reared on the type of medium used in colony rearing.

The larvae from each segment of the population would then be reared on the regular medium used. The same number of eggs or larvae from each source should be placed on the regular medium and reared in the same manner. Several replicates would be desirable from each segment of the two populations.

If an apparent or significant difference in weight of the larvae from the two sources should occur during the first generation, this would suggest that the size and vigor of the parent reared on the host would influence the size and vigor of their larval progeny reared on artificial media. If this should occur, it would be desirable to continue the test for at least one additional generation after parent ~~flies from both~~ sources have again developed on artificial media. Negative results for two generations would indicate that nutritional deficiency is not involved in the deterioration of colony reared screwworms and investigations could be terminated. However, if a difference is apparent it would no doubt be desirable to undertake a variety of further investigations.

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Agricultural
P.O. Drawer 68
College Station, Texas

If screwworm colonies could be "revitalized" to some degree by rearing on animal hosts this should have immediate practical significance in the screwworm program. Flies reared on the host should continue to be "lab adapted" and no doubt could be increased to production numbers within a few generations, whereas colonies started from native flies generally require 6-8 generations of lab rearing before they are well adapted, and by then may be well along the way to deterioration. Such study, aside from its possible practical significance for the screwworm program, could be of practical significance for a wide range of colonized insects that seem to deteriorate in lab colonies, especially certain lepidoptera.

I am sure that your staff has a full program and the type of experiment suggested would have to be weighed against other high priority studies. However, if you think it worthwhile perhaps some member of your group could undertake preliminary experiments along lines proposed. The desirability of continuing or discontinuing the investigations could be judged on the basis of results of such preliminary tests.

Attached are eight copies of my Foreign Travel Report as requested.
I certainly enjoyed my visit at the conference. I wish you success in your new assignment.

E. F. Knipling

E. F. KNIPLING
Expert, Pest Mgmt., NPS
ARS-USDA
Room 302, Bldg. 005
Beltsville, Md. 20705

cc: R. Bram
A. L. LaChance

J. R. Johnston, AD
D. A. Witzel, LD
R. O. Drummond, LD
D. R. Graham, RL



United States
Department of
Agriculture

Agricultural
Research
Service

RECEIVED MAY 27 1983
Southern Region
Veterinary Toxicology
and Entomology
Research Laboratory

P.O. Drawer GE
College Station, Texas
77841

May 24, 1983

RECEIVED AUG 08 1983

SUBJECT: Foreign Travel Report

TO: E. L. Kendrick
Regional Administrator
USDA, ARS, SR
P.O. Box 53326
New Orleans, LA 70153

Attached are eight copies of my Foreign Travel Report as requested.

R. L. Harris

R. L. HARRIS
Research Leader
Biological Control Research Unit

Enclosure

cc: w/encl.
R. A. Bram, NPS
J. R. Johnston, AD
D. A. Witzel, LD
R. O. Drummond, LD
O. H. Graham, RL

United States Department of Agriculture, Agricultural Research Service,
Southern Region -- FOREIGN TRAVEL REPORT

1. Traveler; title; laboratory; center or field station affiliation; location;
and NRP:

R. L. Harris, Research Leader
Biological Control Research Unit
Veterinary Toxicology & Entomology Research Laboratory
College Station, Texas 77841
NRP - 20480

2. Country or countries visited and period of travel:

Mexico
April 11 - 23, 1983 and May 9 - 13, 1983.

3. Purpose of Trip: To conduct tests on screwworm larvae rearing.

4. Summary: Several diets were tested as screwworm larval rearing media. The best diets were gelled by the use of SPG-147, Norbak, Karaya Gum, and Gelcarin HWG.

5. Travel Details: Gelling agents as well as nutritional ingredients were tested to improve the screwworm larval rearing media. These tests are a continuation of tests reported in previous travel reports. The data are being tabulated, however the best gelling agents were SPG-147, Karaya Gum, Norbak, and Gelcarin HWG. Heat coagulation also showed some promise. Less effective gelling compounds were Guar Gum and Seaspren IN. The addition of wheat germ and torula yeast, as well as additional blood and egg, improved the diet. Sugar also appeared to have a beneficial effect.



United States
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Agricultural
Research
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Southern Region
Oklahoma-Texas Area

Screwworm Research
P. O. Box 986
Mission, TX 78572

June 3, 1983

Enclosed is a manuscript concerning a study I am carrying out on larval variation among screwworm samples from preeradication areas. Because you have shown interest in the problem of variation in screwworms and the analyzing data to determine environmental and genetic effects on this variation and I hope soon to complete a study, similar to this one, on variation in Central Mexico populations (if they are not eradicated before I get enough samples).

I would like to hear any comments concerning your opinion of this work. I will be in Mission (tel. (512) 585-2783) until 18 June and in Tuxtla after that date.

Sincerely,

ROBERT L. MANGAN
Research Entomologist

cc:

A. C. Bartlett
R. A. Bram
A. B. Broce
H. E. Brown
R. J. Gagné
B. Greenberg
H. C. Hofmann
F. Jirón
J. Kitzmiller
E. F. Knipling
I. C. McDonald
T. Markow
D. O. McInnis
R. D. Richard
J. A. Seawright
J. W. Snow
B. Wallace

1 July 83

Dear Hugh,

A quick note in the hope that if mailed today, this will reach you at Mission on July 5th. I particularly value your comments after the biochemical orientation to our telephone conversation today. Also, I do not wish to add to a CRIS proposal without your suggestions and/or revisions.

This past 18-months I have worked with the house fly as a model for fruit flies, primarily with respect to the larval-diet thermodynamics, but with the longer term objective of a more thorough picture of the physical and biochemical rearing environment at all stages.

Fortunately for me, I appear to now have the opportunity to relate this lab model with the actual medfly rearing at Metapa. The mutual interest is because IAEA is interested in thermodynamic design data for the Egypt facility design.

As a result of our telephone conversation today, I drafted the paragraph below to include under COOPERATION in the CRIS proposal. However, I do not wish to include it until after you have suggested revisions. When this note does reach you, I would appreciate your telephoning your suggestions. My lab phone --- (FTS) 449-3380
(COMML) 415/486-3380

"paragraph draft"

Cooperation was discussed with Dr. Owen H. Graham, ARS Screwworm Research Leader in Tuxtla Gutierrez (Mexico) who voiced a mutual interest in using an easily reared, innocuous blowfly (*Phormia regina* or equivalent) as a model for the screwworm. This model would be used to study the mass-rearing physical and biochemical parameters with respect to the insect physiology. The objective would be subsequent application to screwworm rearing so as to stabilize and predict maturation, performance, and genetic stability under mass-rearing conditions

Best wishes,

Bill

W. Schultz

USDA-WRRC
Albany, CA 94710



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Screwworm Research Project
Apartado Postal 544

Tuxtla Gutierrez
Chiapas, Mexico

10 July 1983

Dr. Ralph Bram
Insects affecting Man and Animals
Room 211, Bldg. 005
BARC-WEST
Beltsville, MD 20705

Dear Ralph,

Since you have shared interest with us in the development of a method to mark seminal fluid, I thought I would write a quick note to keep you abreast of my developments. Additionally I want to request a favor concerning my long-term career plans.

We are still having problems getting our fluorescence-detecting microscope in operation here in Tuxtla. Key components are still missing; however, this should be resolved within 2 weeks. In mid-June I reran a preliminary trial using 2 fluorescent DNA markers, fed to adults in a honey-water solution. After 6 days, I froze flies in liquid N₂ and hand carried them to Mission where a special microscope is functional.

Results were very promising. Spermatids were clearly marked with the compounds, and the spermathecae in unmated females did not contain fluorescent materials. Hence, there is sufficient preliminary success to warrant further research. I am now beginning studies to test mating interactions in the laboratory. This will be the real test; if males will transfer fluorescent structures to females, and if mating interactions can be accurately classified in blind tests, we are well on our way toward a small field test using ground-released flies. Concurrently, I am feeding various concentrations of these compounds to larvae in hopes of developing a simple and cost-effective method of marking 100% offlies designated for release in field tests. If all goes well, I should have this worked out by late fall.

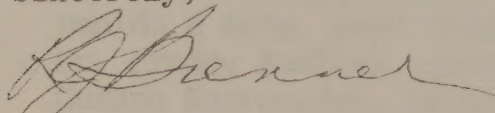
Concerning career goals, we are planning on leaving Tuxtla at the end of our 2-year tour. We are in the process of finalizing arrangements for our son Tony to take correspondence school for the coming school year. We feel that this is marginally acceptable for his first year of high school, but beyond that, we feel that a stable environment for his remaining 3 years is essential for his social development. Such stability and normalization is impossible to achieve while in Tuxtla. Additionally, I very much want to return Joann to a position in which she can control the direction of her life in terms of education or continuation of her career with USDA.

Realizing how tight the job market is, I feel that this moment is not too soon to begin exploring possibilities. Although I have spent the majority of my time working in Mexico since April 1982, my tour officially ends on 26 October 1984. I realize that this can be terminated earlier if it is in the best interests of the U.S. government. If at all possible, we would like to return to the states in time for Tony to enter school on schedule in 1984 (July or August).

I have directed my program here in Tuxtla on a 2 year plan that addresses basic and critical areas of research that will provide new methods for undertaking more precise, rigorous, and cost-effective field studies which in turn will enable us to understand more fully the bionomics of screwworms in the tropics as relevant to the eradication program. I have had excellent support from Dr. Graham, and I trust he concurs to a large degree with the direction and priorities of my research program.

Professionally, I feel that the USDA would benefit most from my training and experience (medical/veterinary entomology, vector biology and control) if I were employed in Gainesville. In your communications with Gainesville, I would appreciate your efforts in discussing placement possibilities with the various research leaders. I plan on presenting a paper at the ESA meeting in Detroit in November-December. I would like to discuss plans with you and others from Gainesville who may attend the meetings.

Sincerely,



R. J. Brenner
Research Entomologist

✓cc: O. H. Graham

RECEIVED AUG 04 1983



INSTITUTO INTERAMERICANO DE COOPERACION PARA LA AGRICULTURA
INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE
INSTITUT INTERAMERICAIN DE COOPERATION POUR L'AGRICULTURE
INSTITUTO INTERAMERICANO DE COOPERAÇÃO PARA A AGRICULTURA

DIRECCION GENERAL

Oficina Central
Apartado Postal 55
2200 Coronado
San José, Costa Rica
Cable: IICASANJOSE
Telex: 2144 IICA

DP/SA-117

12 de julio de 1983

Señor

Dr. Robert L. Mangan
Screwworm Research
P. O. Box 986
Mission, TX 78572
U. S. A.

Estimado Dr. Mangan:

El día de hoy recibí su atenta carta de fecha 24 de junio en la cual me comunica su interés de venir a Costa Rica durante el presente verano para continuar los estudios iniciados con el Gusano Barrenador.

En relación a ello comunícole que cualquier época que decida será bienvenido a ésta, pero creo necesario informarle que a fines de setiembre el Dr. Freddy Ramírez, quien actualmente trabaja con nosotros en el Proyecto del Gusano Barrenador, pasará a trabajar con el Ministerio de Agricultura y Ganadería en otro programa relacionado con garrapata, ya que para esa fecha debemos presentar el Proyecto de Erradicación del Gusano Barrenador para Centro América a ROCAP.

Actualmente estamos colectando larvas en mayor cantidad por ser la época más apropiada debido a que ya se iniciaron las lluvias. Ya le comuniqué al Dr. Ramírez la necesidad de coleccionar muestras de larvas de tercer estadio con su record correspondiente para cuando usted venga.

En relación a lo anterior tengo dudas sobre el procedimiento de conservación de dichas muestras, si deben ser o no conservadas en nitrógeno líquido.

.../...

INSTITUTO INTERAMERICANO DE COOPERACION PARA LA AGRICULTURA

DESTINATARIO Dr. Robert L. Mangan

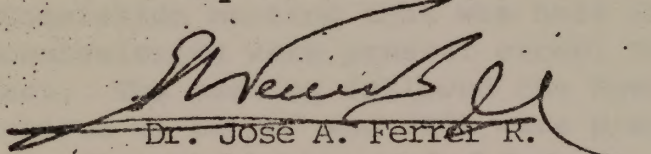
HOJA No. 2

CODIGO DP/SA-117

Como los estudios genéticos creo que llevan tiempo veo muy difícil el poder tener resultados antes de finales de setiembre para incorporarlos al Proyecto, ya que éste es uno de los problemas que intentábamos resolver para la factibilidad de la campaña en América Central. Mucho le agradecería sus comentarios al respecto.

Sin más a que hacer referencia y en espera de sus noticias, se despide,

Muy atentamente,


Dr. José A. Ferrer R.
Especialista en Salud Animal



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas
Area

Screwworm Research
Apartado Postal #544
Tuxtla Gutiérrez, Chiapas
Mexico

August 9, 1983

SUBJECT: 37th Meeting of the Mexico-American Screwworm
Commission

TO: R. A. Bram

As you asked, I attended the Commission meeting that was held in Mexico City on August 4, 1983. All of the Commissioners were present except Mr. Mc Millan who was on a mission to the Far East. The meeting followed the Agenda (copy enclosed) without deviation. Representatives of SWAHRF and IICA were present as observers.

Dr. Pineda presented a succinct description of progress in Field Operations since the previous Commission meeting on May 11. First, a graph was presented comparing the number of positive cases Jan. to July 1982 with the number for Jan. to July 15, 1983; the overall reduction in 1983 exceeded 90%. The graph was followed by charts for each of the five areas of operations which listed number of cases for each state, month by month, for the first 7 months of 1982 and 1983.

The overall picture is very encouraging. Screwworms are presently very scarce in important areas on the Pacific and Gulf coasts of Mexico which were heavily infested in 1982. The progress of eradication to the south is real and impressive. On the negative side, screwworm-free areas in northern Mexico are occasionally being reinfested, primarily by the movement of screwworm-infested cattle by livestock traders. Since May 1 three reinfestations, one in Nuevo Leon and two in Tamaulipas, have been detected, treated and apparently eliminated. Despite the closeness of these cases to the border, there have not been any infestations in the United States for about 12 months and there is hope that 1983 will be the first year that the U.S. is entirely screwworm-free.

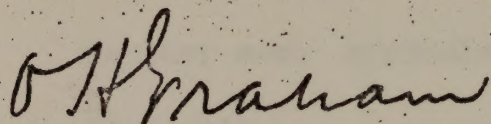
Fly production was presented by Dr. Reichard with comparisons of Jan. to July 1982 and 1983. Both total production and larval size have been much better in 1983 with production consistently exceeding 500 million per week. Size has always exceeded the goal, 60 mg., but a recent drop from a high of about 68 mg to 62-63 mg is cause for concern. Since ARS has been rearing 70 + mg larvae from the same eggs it does not appear that the drop in weight can be attributed to genetic deterioration of the A-82 strain in mass production. More likely smaller size was caused by one or a combination of the following factors (1) inferior food products, (2) worker unrest, or (3) mechanical problems which resulted in undesirable temperature fluctuations.

A request from Methods Development for two new rearing facilities was presented by J. D. Hoffman. These facilities will make it possible for Methods to rear a candidate strain at a level of 5-7 million per week for field testing and for ARS simultaneously to develop an entirely new strain completely isolated from each other and from strains inside the plant. Construction, which will cost \$760,000, was approved by the Commission. When these facilities are complete in late 1984 rearing of five types will be possible, each in complete isolation and with

improved security: (1) mass production in the plant (2) rearing of a new strain for the next strain change at a level of 30 million/week, also in the plant (3) rearing of still another new strain in adequate numbers for a field test (4) development by ARS of a third new strain, and (5) rearing in the ARS laboratory of the several small colonies used for research in screwworm genetics, ecology, behavior and rearing technology. These facilities will be cost effective in that they will improve the efficiency of the barrier which will under the present program be maintained in perpetuity beginning in 1985.

Methods reported that the Oaxaca strain is currently being reared in the Method's area of the plant at a level of about 2 million per week and that the size has averaged 71 mg on liquid medium. Production is expected to reach 5 million by August 15, the week that field releases are scheduled to begin. (Some discouraging incidents have become evident since the Commission meeting; a severe shortage of eggs has occurred, probably caused by the adverse effect of construction work on environmental conditions. The first field releases of Oaxaca strain have been rescheduled for September).

The next Commission meeting will be held in Oaxaca, Oax. in early December.



O. H. GRAHAM

Location/Project Leader

Enclosure

cc:

J. R. Johnston

H. E. Brown

C. J. Whitten

R. E. Reichard

Oklahoma-Texas
Area

Screwworm Research
Apartado Postal #544
Tuxtla Gutiérrez, Chiapas
México

September 18, 1983

Dr. F. G. Maxwell, Head
Department of Entomology
Texas A & M University
College Station, TX 77843

Dear Dr. Maxwell:

This letter confirms my verbal request to Mr. Mike Ferguson for the appointment of Chris M. Van Dyck to a temporary position as a scientific illustrator in your Department with the costs to be reimbursed from the funds available for cooperative screwworm research. The suggested effective date was Sept. 16, 1983, the recommended salary \$20,000 per year, and the anticipated date of termination is January 31, 1984.

We very much appreciate your help and cooperation with this program.

Sincerely,


O. H. GRAHAM
Location/Project Leader

cc:

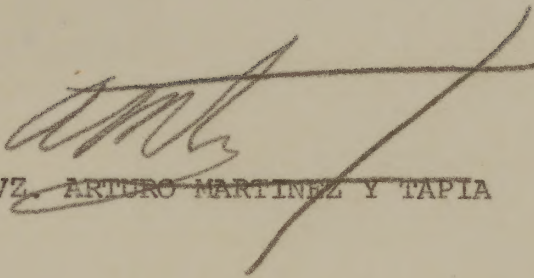
J. R. Johnston
M. A. Price
Mike Ferguson
H. E. Brown
Oralia Garcia
Josie Salinas
Chris Van Dyck

Oklahoma-Texas
Area

Screwworm Research
Apartado Postal #544
Tuxtla Gutierrez, Chiapas
Chiapas

September 22, 1983

Recibi de ARS y llevé de la Planta 10 borregos para uso de la Sección de
Desarrollo de Métodos.



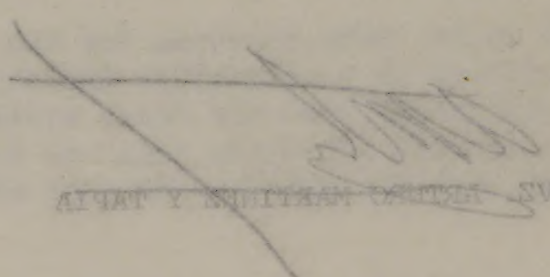
MVZ. ARTURO MARTINEZ Y TAPIA

Screwworm Research
Apartado Postal #544
Tuxtla Gutierrez, Chiapas
Chiapas

Oklahoma-Texas
Area

September 22, 1983

Recibi de ARS y llevé de la planta 10 porreos para uso de la Sección de
Desarrollo de Métodos.


MVS. JESUS MARTINEZ Y TABIA

RECEIVED SEP 28 1983

Hugh, I'm not sure that I understand all I know about Directive 212.8, but if we could work out a contract it would help tremendously.

Sam Owen yesterday. He is helping me with some foundation problems.

Sure looking forward to working in Oct.

Happy

23 Sept. 1983

RECEIVED SEP 29 1983

SUBJECT: Directive 212.8 Discussion of
 U.S. Dept. Agr. & Possible Work-
 Sci. & Educ. Contract

TO: Dr. O. H. Graham
 Location/ Project Leader
 Screwworm Research
 Tuxtla Gutierrez, Chiapas

I studied Directive 212.8 (copy enclosed). I don't understand it completely, but it does seem clear that ARS can pay fees to former employees for fulfillment of contracts on defined projects.

Would it be possible for me to work under contract for ARS to complete the development of the mats for rearing screwworms?

The most critical aspect in obtaining a contract is probably justifying, with reasons asked for in part 2a of the APPROVAL PROCEDURE, that work be done by non-ARS personnel. The following justification could be submitted:

The candidate-contractor has unmatched experience in screwworm-technology (approximately 22 yrs actual working-time) involving research in the production of larvae/pupae and the utilization of adults for implementation of the sterile-male technique and in surveying, in the field, for induced effects and monitoring population dynamics of native populations.

The candidate-contractor has proven abilities for designing, executing, and reporting laboratory and field research on insects. He is coauthor of 31 and author of 11 scientific articles.

The candidate-contractor has proven practical creativity. Recently he developed as well as designed a new system for dispersing sterilized marked screwworms for studying populations in the field that is currently in use by ARS scientists. He was instrumental in modifying a portion of the plant in Tuxtla Gutierrez that controlled a debilitating infestation of houseflies. (Any plant of the future will incorporate the modification). At present ARS is completing development of a system, proposed by the candidate-contractor, to revolutionize the mass-rearing process for screwworms. The system has the potential to save several million dollars yearly on material, labor, and waste-disposal. Strong consideration will be given to modifying the present plant to use the system and incorporating it into any plant of the future.

Tentatively, I would ask for a fee of \$13,240 for 10 wks service per year (or per contract); the rationals behind that request are as follows:

\$100/day for 8 wks of work in Mexico	-	-	-	-	-	-	-	-	-	\$5600
" " " 2 " " " " the US	-	-	-	-	-	-	-	-	-	1400
40/ " " 8 " " lodging in Mexico	-	-	-	-	-	-	-	-	-	2240
car rental or car-expeence	-	-	-	-	-	-	-	-	-	4000
										<u>13240</u>

The contract would specify that the contractor will render 8 wks of service on-site in Mexico and 2 wks of service in the US.

Some advantages to ARS would be that at least 70 days (29% of the working-days in one year) of highly skilled work would be done under the supervision of ARS and complete reports submitted that would likely result in publications with ARS authorship.

D. E. Hopkins
D. E. Hopkins
Retired APHIS & ARS Research Technician

23 Sept. 1983

RECEIVED 23 1983

SUBJECT: Directive 212.8 Discussion of
 U.S. Dept. Agr. & Possible Work-
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 Location/ Project Leader
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" " " 2 " " " " the US	-	-	-	-	-	-	-	-	-	1400
40/ " " 8 " " lodging in Mexico	-	-	-	-	-	-	-	-	-	2240
car rental or car-expence	-	-	-	-	-	-	-	-	-	4000
										13240

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D. E. Hopkins

D. E. Hopkins

Retired APHIS & ARS Research Technician

DIRECTIVE

212.8

ORIGINATING OFFICE:

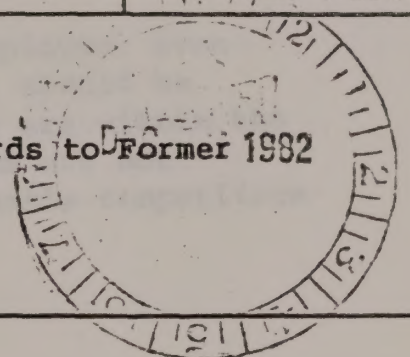
Administrative Services Division
Acquisition and Supply Management
Branch

DISTRIBUTION:

Headquarters, Regions, Areas/Centers,
and Locations

SUBJECT:

Procurement Awards to Former 1982
USDA Employees



A BACKGROUND

In a July 2, 1980, memorandum to Heads of Agencies, the Office of Management and Budget directed agencies to develop a management control system for consulting service contracts and for improving agency procurement practices. The Department established its system on July 31, 1980. To implement the system, on September 5, 1980, USDA issued Notice O&F-AS-20. It specifically required Secretarial approval of all proposed contract actions with former USDA employees. Departmental Notice 5000-13 revised the approval process to cover certain contract actions with former USDA employees while exempting others. This DIRECTIVE implements Departmental Notice 5000-13 within Science and Education.

B FORMS

AD-700, Requisition for Supplies, Equipment, or Services
S&E-658, Questionnaire To Determine That Services To Be Acquired
Are Nonpersonal

C REQUIREMENTS

The approval of the Assistant Secretary for Administration is required for procurements in excess of \$500 from former USDA employees or from companies that are substantially owned or controlled (51 percent or more) by former USDA employees, who retired or resigned within 3 years of the date of the solicitation.

D EXEMPTIONS

The following types of actions are exempted from the requirements of paragraph C:

- 1 Contract with a former employee who is the low bidder on a solicitation which was formally advertised, or negotiated using Small Business Restricted Advertising procedures.
- 2 Contract or purchase order with a former employee who was the low offeror on a negotiated procurement which was evaluated on the basis of price alone.
- 3 Purchase order which does not exceed \$500.

D EXEMPTIONS (Continued)

47 Repetitive negotiated awards to the same former employee, even though the awards are within the above exemptions, should be reviewed by the Contracting Officer to assure they are within the spirit of this DIRECTIVE, e.g., that specifications are not unnecessarily restrictive and that maximum practicable competition is obtained.

E APPROVAL PROCEDURE

All proposed procurements will be forwarded by the requisitioner through the Regional Procurement Officer or appropriate Administrative Operations Division official (i.e., Chief, Contracts Branch - requirements exceeding \$10,000; or Procurement Officer - requirements of \$10,000 or less) to the Chief, Administrative Services Division, who will refer the proposed actions to the Department for Secretarial approval. All requests for approval shall include the following:

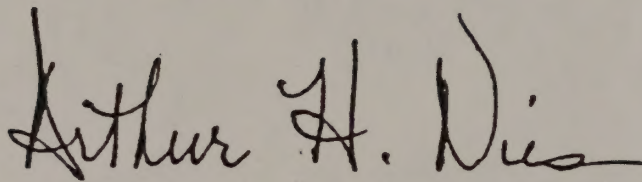
- 1 A properly completed AD-700 with certified funds available for the procurement along with:
 - a A description of what is to be procured;
 - b Former employee's name, grade, title, and description of duties while employed by the Department; and
 - c Date employee left the Department.
- 2 A statement which describes:
 - a Reasons why in-house capability or other Government sources are not available or adequate; and
 - b Impact on the agency of foregoing the requirement.
- 3 If the proposed action is for services:
 - a A properly completed Form S&E-658 (see DIRECTIVE 212.3) to show that the prohibition against personal service contracting has been complied with; or
 - b A citation of the authority and appropriation authorizing the procurement of personal services.
- 4 A complete procurement package including:
 - a All required Determinations and Findings;
 - b The extent of competition (include a sole-source justification, if applicable);
 - c Proposed amount of award;

E APPROVAL PROCEDURE (Continued)

- d Evaluation and selection criteria if evaluated on factors in addition to price;
- e Statement of Work;
- f Period of performance; and
- g Deliverables or end results to be achieved.

F RESPONSIBILITIES

- 1 Requisitioners are responsible for determining requirements and providing the documentation specified in E 1, 2, and 3 above.
- 2 Contracting Officers are responsible for determining whether a particular procurement action is subject to a review and approval, and for providing documentation specified in E 4 above.
- 3 The Chief, Administrative Services Division, is responsible for review and approval or disapproval of request and the referral of request through appropriate channels for the approval of the Assistant Secretary For Administration, USDA.



Arthur H. Nies
Deputy Director
Administrative Management



COMISION MEXICO-AMERICANA PARA LA ERRADICACION DEL GUSANO BARRENADOR

LA ENERGIA ATOMICA AL SERVICIO DEL GANADERO

4 de octubre de 1983

October 4, 1983

ASUNTO: Posible cambio de cepa de moscas

SUBJECT: Possible change of fly strains

PARA: Dr. Nazario Pineda V.
DirectorTO: Dr. Robert E. Reichard
Co-Director

Durante los últimos años, ha sido política de esta Comisión que la cepa de mosca en producción deba cambiarse por lo menos cada año para poder asegurar la distribución en el campo de un insecto que sea más compatible con las moscas nativas del gusano barrenador. Actualmente la Comisión está efectuando una prueba de campo sobre la cepa candidata que se denomina O-83. No se puede tomar una decisión sobre la sustitución de esta nueva cepa por la cepa A-82 hasta que se termine la prueba, más o menos el primero de noviembre. Pienso que entonces se deberán tomar de inmediato las siguientes acciones.

1. Aumentar el número de insectos de la cepa O-83 que se producen en Desarrollo de Métodos en Tuxtla Gutiérrez hasta el máximo posible. Esto asegurará el inicio de un cambio de cepa de la mosca tan pronto que se decida cambiarla.

2. Obtener tantos datos sobre la O-83 y la A-82 como sea posible para poder tomar una decisión para cambiar o no la cepa.

3. Hacer planes para completar el cambio de cepa para mediados de diciembre, por se se decide cambiarla en ese momento.

Pienso que sería mejor cambiar la cepa ahora en vez de esperar hasta febrero, marzo o abril del año entrante. La razón de esto es que las moscas estériles del gusano barrenador son más efectivas cuando la población nativa está baja. Por lo general, la población de gusano barrenador es más alta en los dos meses

It has been the policy for the past several years that the fly strain in production should be changed at least annually in order to assure the distribution of an insect in the field that is more compatible with the native screwworm flies. The Commission is currently field testing a candidate strain known as O-83. A decision of whether or not this new strain will replace the A-82 strain cannot be made until the conclusion of this field test which will be about the first of November. I feel that the following actions should be taken immediately:

1. Increase the numbers of O-83 insects being produced in Methods Development at Tuxtla Gutiérrez to the maximum. This will assure that a change of fly strains can begin as soon as a decision is made to change.

2. Obtain as much data on O-83 and A-82 in order to make a decision on whether to change strains.

3. Make plans to complete the strain change before mid-December, if it is decided to change at this time.

I feel that it would be better to change strains now then to wait until next February, March or April. The reason is that sterile screwworms are most effective when the native population is low. Generally the screwworm population is at the highest the first two months after the rainy season ends. As the

después de la terminación de la temporada de lluvias. Conforme va progresando la temporada seca, la población de gusano barrenador empieza a declinarse en enero. La mejor oportunidad para la eradicación del gusano barrenador es de febrero a junio, o hasta que empiece la temporada de lluvias otra vez.

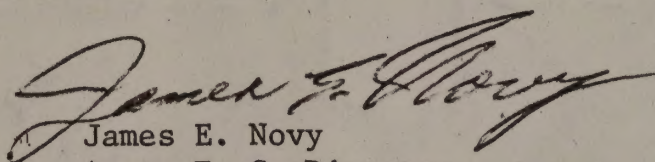
Cuando se efectúa un cambio de cepas, es seguro que disminuya la producción. Estoy seguro que las condiciones mejoradas de crianza que existen actualmente en Desarrollo de Métodos evitarán que la disminución de producción sea tan drástica como se ha experimentado en los pasados dos años. La producción no deberá reducirse más de los 300 millones por semana. Como resultado, la recuperación a niveles de 500 millones semanales se deberá lograr más rápidamente. Por esta razón, si se hace el cambio antes de mediados de diciembre, el nivel de producción deberá alcanzar los 500 millones para febrero.

Para poder maximizar la producción en los laboratorios de Desarrollo de Métodos, es importante que se les autorice un número suficiente de trabajadores para cuidar las charolas de crianza y que se aumente la densidad de larvas en las charolas de crianza a 8 - 10 gms. de huevecillos por petri. También es importante que preparen el máximo número de jaulas de oviposición (más o menos dos por turno) para tener suficiente producción de huevecillos. La meta deberá ser obtener suficiente pupa disponible para empezar a preparar a principios de noviembre el máximo número de jaulas en producción en cada turno; esto es, más o menos 28.

dry season progresses the screwworm population begins to decline in January. The best opportunity for screwworm eradication is from February through June, or until the rainy season once again begins.

Whenever a change of strains is made there is certain to be a drop in production. I feel certain that improved rearing conditions now exist in Methods Development so that the drop will not be as drastic, as has been experienced the past two years. Production should not fall below 300 million per week. As a result the recovery to 500 million per week should occur more rapidly. Therefore, if a change is made before mid-December the production level should reach 500 million per week by February.

In order to maximize production in Methods Development it is important that they be authorized a sufficient number of workers to care for the rearing vats, and that the density of larvae on the rearing vats be increased to 8 to 10 gms. of eggs per petri. It is also important that they set up the maximum number of fly cages, which is about two per shift, in order to have sufficient egg production. The goal should be to have a sufficient quantity of pupae available to begin setting up the maximum number of cages in production each shift, which is about 28, beginning the first part of November.


James E. Novy
Asst. To Co-Director

cc: M.V.Z. Salvador Cajero A.
M.V.Z. Agustín Pagaza, Ronald E. Lowe
M.V.Z. Sergio Martínez, H.C. Hofmann
M.V.Z. Moisés Vargas T., David W. Anderson



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Veterinary Toxicology
and Entomology
Research Laboratory

RECEIVED OCT 27 1983
P.O. Drawer GE
College Station, Texas
77841

October 5, 1983

Dr. O. H. Graham
USDA-ARS Screwworm Research
Apartado Postal #544
Tuxtla Gutierrez, Chiapas
MEXICO

Dear Hugh:

Attached is the research protocol for testing the mats and a drawing of the sheet metal mat that we need. If you could get the shop or a local sheet metal shop to build two of these, it would help speed up the tests. They are rather simple, and we can put in the drain tubes when we get there.

Also, attached is a copy of AM 212.8. Happy wanted to know if he could be paid by a purchase order and obtain more than just travel. I assume he could, however, he would probably need to resign his collaborator appointment with the USDA. I do not know all the details of a purchase order. We have used it to pay for seminar speakers.

Hugh, did you find out if they have water bed heaters in Tuxtla? Could you have Oralia to check on getting a wet-dry vacuum?

I will see you in late October or November.

Sincerely,

R. L. HARRIS
Research Leader

3 Enclosures

cc: w/encl. (protocol)
J. A. Miller, ARS
D. E. Hopkins, ARS

Protocol for Testing Reusable Mats of Plastic Fibers as Substrates for Rearing Screwworms

D. E. Hopkins, J. A. Miller, O. H. Graham, and R. L. Harris

Typically, screwworm larvae in artificial diet or wounds require a substrate solid enough to allow them to assume, while feeding, a fixed attitude with the posterior outward.

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(b) With the mats in place in the vats, flood them with diet 11:2:1:86 (%'s of blood, egg, milk, and water, respectively) to the upper surface or until they float.

(c) Daily, implant on each mat 48 hr old larvae (rear larvae for their 1st 48 hrs on diet thickened with 1% SPG or Norbak) from 1.5 gms of eggs.

(This would approximate the implantation rate in the Plant--7 gms/13,940 cm²/4.3 days.)

(d) Change diet every 12 hrs.

(e) When fully-grown larvae begin to leave the diet (crawl-off), determine (daily) the weight of the larvae and the volume of pupae.

The criterions for acceptable function of a system would be: (a) the average weight of fully-grown larvae--60-65 mg larvae would be considered

acceptable and 65 or greater exceptional, and (b) quantity of pupae produced/day/cm² of rearing-surface--1.5-1.6 pupae/cm² would be considered acceptable and more than 1.6 exceptional.

Tests of various implantation rates, implantation schedules, schedules for changes of diet, diets, and weaves (thickness' of mats), and sizes of the rearing-area should be run to develop the optimum system.

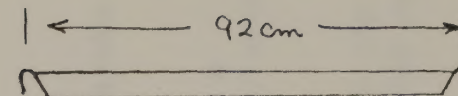
NOTE: It would be a good idea to send a copy of the protocol to Production and ask that they assign a biotech with Plant experience to help with the tests. (Manny Ortega would be a good choice.)

153 cm

92 cm

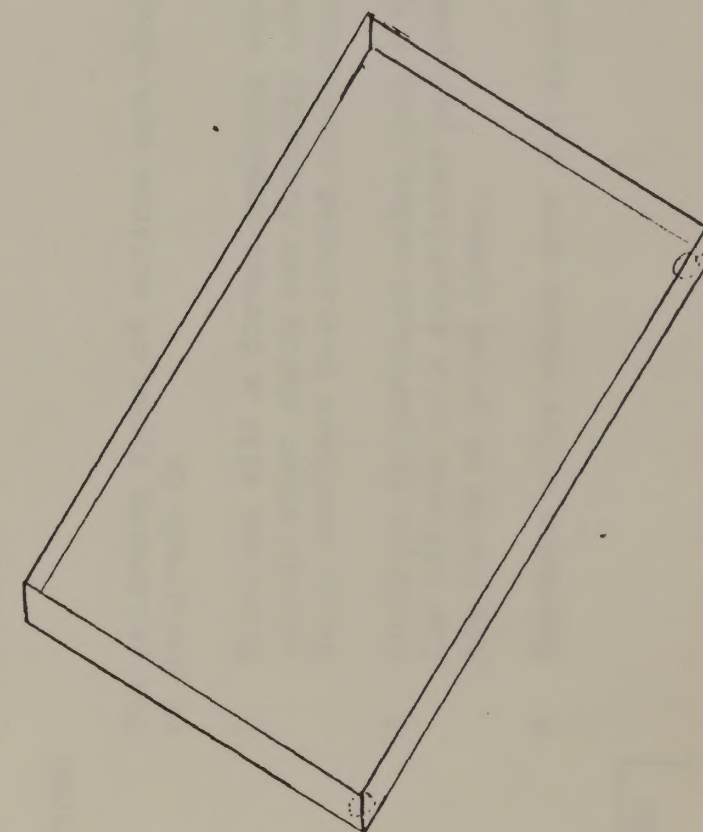
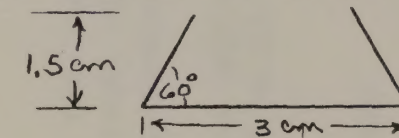
CONSTRUCT 2 REARING VATS
OF ALUMINUM OR GALVANIZED
SHEET METAL.

6 cm dia. holes



MAKE 8 EMERGENCE CHANNELS
TO FIT ACROSS VAT (ALUMINUM
OR SHEET METAL)

CROSS-SECTION OF CHANNELS



ALL EDGES ROLLED OR ROUNDED

5 cm. DEEP

STO. PVC CLEAN-OUT FITTING
TO BE INSTALLED FOR DRAINING VAT
(SUPPLIED BY MILLER)

DIRECTIVE

212.8

ORIGINATING OFFICE: Administrative Services Division Acquisition and Supply Management Branch	SUBJECT: Procurement Awards to Former 1982 USDA Employees
DISTRIBUTION: Headquarters, Regions, Areas/Centers, and Locations	

A BACKGROUND

In a July 2, 1980, memorandum to Heads of Agencies, the Office of Management and Budget directed agencies to develop a management control system for consulting service contracts and for improving agency procurement practices. The Department established its system on July 31, 1980. To implement the system, on September 5, 1980, USDA issued Notice O&F-AS-20. It specifically required Secretarial approval of all proposed contract actions with former USDA employees. Departmental Notice 5000-13 revised the approval process to cover certain contract actions with former USDA employees while exempting others. This DIRECTIVE implements Departmental Notice 5000-13 within Science and Education.

B FORMS

AD-700, Requisition for Supplies, Equipment, or Services
S&E-658, Questionnaire To Determine That Services To Be Acquired
Are Nonpersonal

C REQUIREMENTS

The approval of the Assistant Secretary for Administration is required for procurements in excess of \$500 from former USDA employees or from companies that are substantially owned or controlled (51 percent or more) by former USDA employees, who retired or resigned within 3 years of the date of the solicitation.

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The following types of actions are exempted from the requirements of paragraph C:

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D EXEMPTIONS (Continued)

Repetitive negotiated awards to the same former employee, even though the awards are within the above exemptions, should be reviewed by the Contracting Officer to assure they are within the spirit of this DIRECTIVE, e.g., that specifications are not unnecessarily restrictive and that maximum practicable competition is obtained.

E APPROVAL PROCEDURE

All proposed procurements will be forwarded by the requisitioner through the Regional Procurement Officer or appropriate Administrative Operations Division official (i.e., Chief, Contracts Branch - requirements exceeding \$10,000; or Procurement Officer - requirements of \$10,000 or less) to the Chief, Administrative Services Division, who will refer the proposed actions to the Department for Secretarial approval. All requests for approval shall include the following:

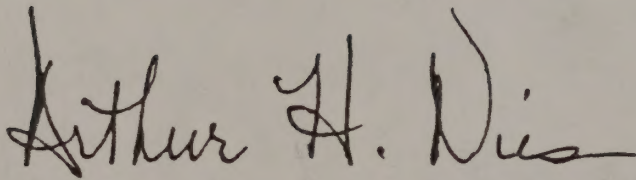
- 1 A properly completed AD-700 with certified funds available for the procurement along with:
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E APPROVAL PROCEDURE (Continued)

- d Evaluation and selection criteria if evaluated on factors in addition to price;
- e Statement of Work;
- f Period of performance; and
- g Deliverables or end results to be achieved.

F RESPONSIBILITIES

- 1 Requisitioners are responsible for determining requirements and providing the documentation specified in E 1, 2, and 3 above.
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Arthur H. Nies
Deputy Director
Administrative Management



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Veterinary Toxicology
and Entomology
Research Laboratory

P.O. Drawer GE
College Station, Texas
77841

RECEIVED OCT 13 1983

October 5, 1983

Dr. O. H. Graham
USDA-ARS Screwworm Research
Apartado Postal #544
Tuxtla Gutierrez, Chiapas
MEXICO

Dear Hugh:

Attached is the research protocol for testing the mats and a drawing of the sheet metal mat that we need. If you could get the shop or a local sheet metal shop to build two of these, it would help speed up the tests. They are rather simple, and we can put in the drain tubes when we get there.

Also, attached is a copy of AM 212.8. Happy wanted to know if he could be paid by a purchase order and obtain more than just travel. I assume he could, however, he would probably need to resign his collaborator appointment with the USDA. I do not know all the details of a purchase order. We have used it to pay for seminar speakers.

Hugh, did you find out if they have water bed heaters in Tuxtla? Could you have Oralia to check on getting a wet-dry vacuum?

I will see you in late October or November.

Sincerely,

Bob

R. L. HARRIS
Research Leader

3 Enclosures

cc: w/encl. (protocol)

J. A. Miller, ARS

D. E. Hopkins, ARS

Protocol for Testing Reusable Mats of Plastic Fibers as
Substrates for Rearing Screwworms

D. E. Hopkins, J. A. Miller, O. H. Graham, and R. L. Harris

Typically, screwworm larvae in artificial diet or wounds require a substrate solid enough to allow them to assume, while feeding, a fixed attitude with the posterior outward.

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NOTE: It would be a good idea to send a copy of the protocol to Production and ask that they assign a biotech with Plant experience to help with the tests. (Manny Ortega would be a good choice.)

DIRECTIVE

212.8

ORIGINATING OFFICE:

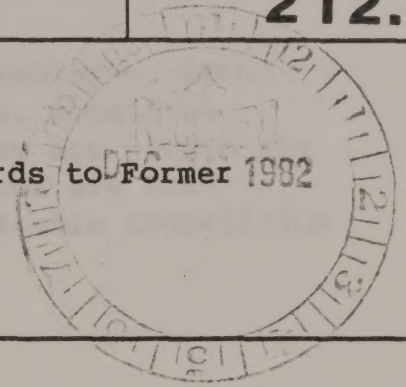
Administrative Services Division
Acquisition and Supply Management
Branch

DISTRIBUTION:

Headquarters, Regions, Areas/Centers,
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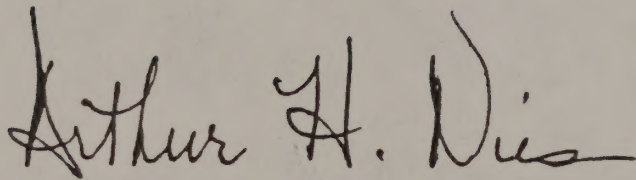
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Arthur H. Nies
Deputy Director
Administrative Management



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas
Area

Screwworm Research
Apartado Postal #544
Tuxtla Gutierrez, Chiapas
Mexico

October 14, 1983

SUBJECT: Proposed Research Activities of
R. Peterson, ARS, Tuxtla

TO: O. H. Graham
Location Leader

With the arrival of D. Taylor to assume the responsibility of strain development more of my time will be spent in field studies.

Sugar Feeding Studies

The data for this study in collaboration with J. Mackley and A. Ocampo has been collected and is being analysed by the statistical staff at College Station.

Larval Weight/Pupal Weight

In an attempt to clarify the relationship between larval weight and pupal weight it is hoped that the time consuming task of determining larval weights (taken whenever our staff is working their 8 hour day) in strain development can be eliminated. If a similar relationship exists between different strains (V81, A82, Micholima and O83) larval and pupal weights ie linear regression similarities then a sample of 100 pupae (which represents our total yield) can be weighed and the corresponding larval weight determined.

Preliminary weights have been taken using O83 and Dr. H. D. Petersen is currently analysing the results. I hope to take crawl off larval weights and 4 day old pupal weights (to the hour) for the 4 above mentioned strains to see if more confidence can be put in our larval weight data.

In conjunction with this work and while on TDY in Fargo I began looking at % weight loss between larval and pupal weights as well as weight loss and survival of larval and sex ratio of adults when larvae are given access to a pupation media (sawdust) only at selected times after crawl off under laboratory rearing conditions.

Wound Rearing

To shed light on whether loss of larval weight during extended periods of mass rearing is an indication of genetic breakdown or accumulated nutritional deficiencies I propose to reintroduce V81, A82, Micholima, and O83 strains to the wound environment. It is proposed to rear simultaneously in the lab and on a wounded animal known numbers of larvae from known parentage.

O. H. Graham

So far, a larval crawl off system has been devised whereby the wounded animal is secured allowing larvae to crawl off naturally and be collected in sawdust catch pans. A large screened outdoor cage has been constructed to minimize native flies from ovipositing and confounding the results. Larvae will be collected at 8, 12, and 1430 with crawl off weights taken and pupal weights taken 4 days hence. Pupae will be held individually to determine sex. Laboratory vat and wound reared material will be handled similarly. Although considerable data has been collected on V81, A82, and Micholima the constraints on personnel during the collection of Tabasco strain material necessitates that much of this work be repeated.

After initial data is collected as outlined above, we will continue rearing an on-animal line of each of the above mentioned strains and reintroduce a portion of each generation back into the laboratory vat rearing environment. This will give us data on larval weight loss rates after varying numbers of generations of being wound reared.

Portable Trapping System

The Commission has expressed an interest in a compact trapping/killing system (sticky traps, bait station, etc) which could be set out by inspectors on horse-back in remote areas. The bait station as originally designed is bulky but may be adaptable if the wax/SL mix could be reduced in size ie pressed into a flat unit. The simplest approach and the one I'm pursuing is incorporating SL into a plastic wick and attaching the wick to one of the Zoecon sticky trap designs. Since field operations and inspectors need to know if aerial released flies are penetrating remote areas sticky traps would hold & kill flies for identification...an advantage over the original bait station concept. As long as exact counts of flies are not required ie the trap not being used as a survey tool but only to detect flies in remote areas, the sticky trap concept has merit.

From preliminary work done around the plant, technicians can identify screwworms from macellaria from sticky trap collected daily. Currently we are working on a trap that will trap efficiently for 7 days (the period of time requested by Commission personnel in Mexico City). Whether we can identify screwworms which have been on the trap for 7 days remain to be determined. As far as the attractant is concerned wicks with SL are less attractive than a bottle of SL with a wick. Considering the volume of SL used in the bottle control, direct comparisons in trap efficiency may not be valid. Further studies will continue around the plant to determine the best trap to field test. The current work being done by others on micro-encapsulation of SWASS could effect our trap design decisions.

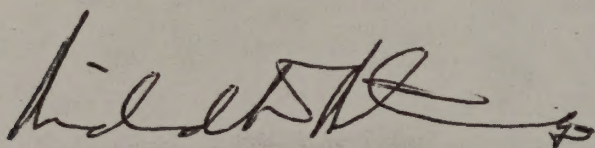
Incidence and Movement of Screwworms in Mountain Areas

When a field prototype portable trap is ready to test we will need an area near Tuxtla which simulates the remote nature of areas the trap will be used. For this reason I have chosen the Sumidero National Park. Initially, there are several advantages. 1) single land owner 2) a series of canyons and mountain trails where the trap could be tested 3) accessible 4 wheel drive road 4) a variety of vegetation types 5) freedom of access over a large land mass for other studies. Obtaining permission has become a difficult task. Park administration is not centralized and, I believe, there is a general mistrust of Commission activities ie plant sewage and river pollution. I am still going to pursue this area as I feel it

O. H. Graham

would be a good location for a variety of studies... not only mine but those of others in our laboratory.

My main interest is to survey with WOT the various vegetation type and elevations to determine native fly incidence prior to the release of sterile flies in the area. Egg mass collections off sheep could provide our genetists with isofemale material for a variety of studies. Then I want to ground release marked flies at the bases of drainage areas, in secluded pot hole basins, in the different vegetation zones, elevations and agricultural areas and record movements away from release points. Temperature, cloud cover, wind direction, etc would be monitored in each of these select areas. Following this, I want to study the movements of marked flies dropped along known flight lanes which would give us information on fly movements as well as degree penetration (and program efficiency in remote areas) of the canopy areas. Studies of this type would be worthwhile in the wet and dry season over at least a years time. Peripheral studies carried on during this time would include identification of plant and animal species in the area studied (the park has hired 2 biologist who are just beginning to catalog the parks flora and fauna); attraction of non target organisms to SWASS w/SL-4 or to the new encapsulated formulation of SWASS. This would include trapping of mammals attracted to as well as arthropods killed by SWASS. Hopefully, any new formulation of SWASS could be field tested in a mountain area of this type (as well as in other geographic areas). The results of this ambitious program depends on obtaining permission from park personnel, and the speed with which the program moves into the isthmus. I only regret I wasn't able to begin this two years ago. There is much that needs to be known about screwworm ecology in mountaneous areas, areas like Oaxaca, Guerrero, and Chiapas where the final challenge remains.



RICHARD D. PETERSON II

Oct 17

Dear Hugh

It was a most welcome surprise to get your letter and all the kind comments about the Anopheles book. Actually it was fun to write, even tho it took about 12 years, on and off. I enjoyed the detective work necessary in a lot of cases — to search thru old records, military documents, etc. Perhaps the most interesting aspect was contacting children, grandchildren and other family members to attempt to dig up long-forgotten data.

As for writing ability, you put your finger on it -- the Halpins, McGuiness and O'Toole on my mother's side thank you!

Most of the reviews have been good. In fact the reaction has been so positive that I have been coaxed into doing another volume (maybe 2!) on all the rest of the mosquitoes. Well, there go my weekends,

It is good news about the screwworm control results.

I suspect that you will eventually be able to establish a line in Panama & defend that, using only the proven surveillance methods further north.

Thanks again for your comments.

Cordially

Jim

FLORIDA MEDICAL ENTOMOLOGY LABORATORY
UNIVERSITY OF FLORIDA
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
P. O. BOX 520
VERO BEACH, FLORIDA 32960

2009-11-15

KITZ MILLER

October 17, 1983

SUBJECT: Strain evaluation meeting with Dr. Peterson, Dr. Hofmann and Mr. Sudlow

The following are the conclusions and a brief summary of the meeting held October 13 in Hyattsville, Maryland. The meeting opened with a summary of the data collected from the strain reared in Mission and Tuxtla Gutierrez. Dr. Peterson explained the types of analyses, data input and accompanying graphs generated from the data which had been gathered over the summer. (See attachment.)

After reviewing the graphs Dr. Peterson explained that of the various sets of data only the data gathered on larval-pupal weights and production of eggs per cage showed any trends over time in production. That is, he further explained, there is an apparent loss of both larval and pupal weight from the time the strain is introduced to the time the strain is taken out of production. During this same period, there is an increase in the harvest of eggs per cage. The remaining data is harvest per vat, mortality and longevity, which did not prove to have consistent trends through all strains. After discussing these parameters, it was clear that they did predict a strain deteriorating but did not predict when a strain was no longer useful to the program.

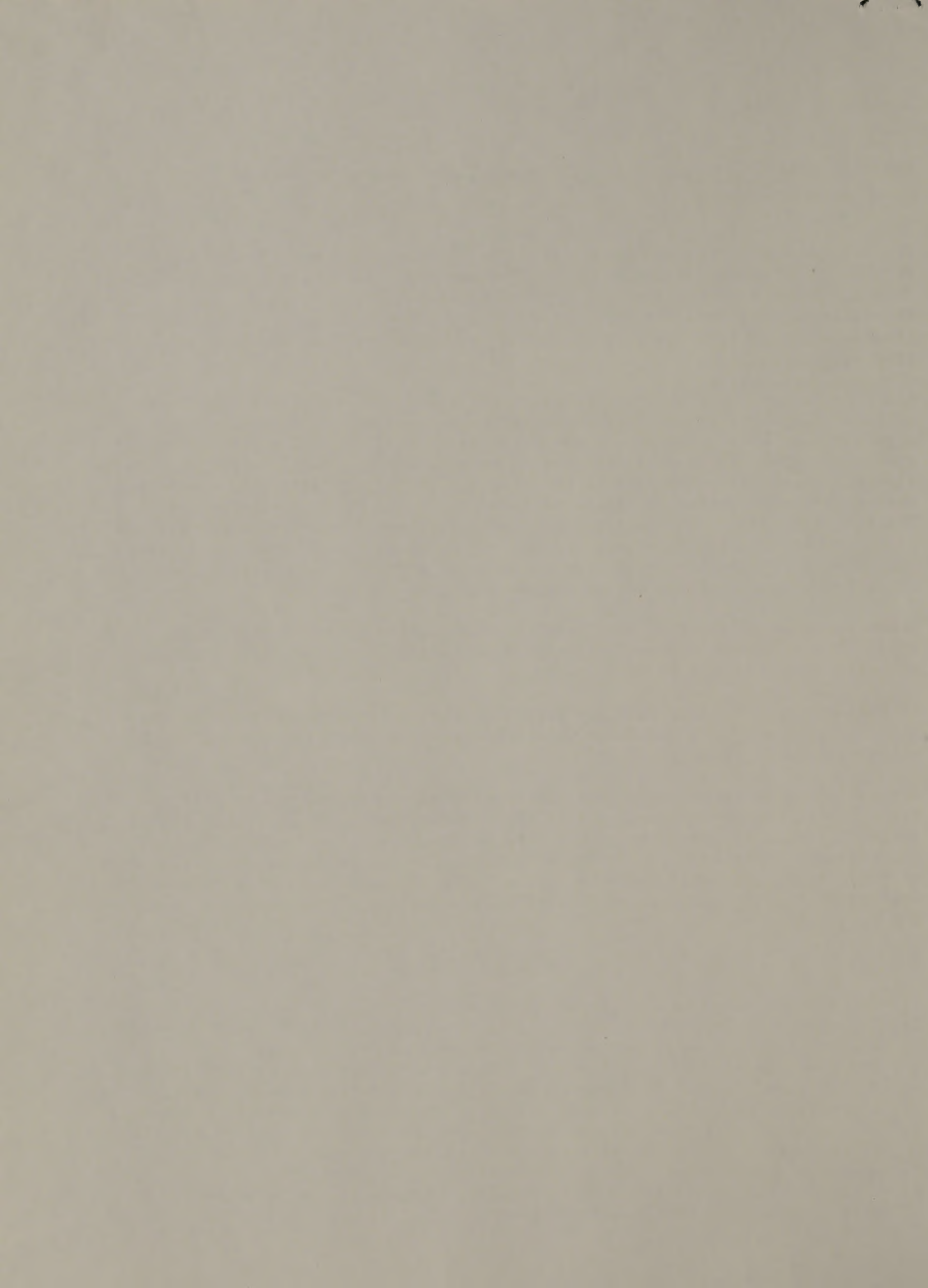
However, it was clear that the "best" strains, based on field performance, were strains that had the highest weight when introduced. It was felt that some criteria should be set in this regard.

In relation to the final point on larval weight, this is the first time that data has been analyzed and shows what previously had been speculation can be substantiated by data.

The following are points that must be considered as "follow-up" to this study. First, it is highly recommended that the incoming data continue to be analyzed. (This data will be sent from Mexico City to Mr. Sudlow for analysis by Dr. Peterson.) Secondly, a complete analysis and comparison of the field tests of V-81, A-82, and O-83 should be carried out. (This data will be sent to Washington for Dr. Peterson on October 24.) Finally, all data should be written and published.

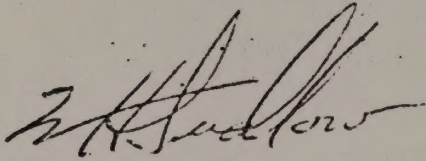
SUMMARY

1. Strains are shown to lose larval/pupal weight.
2. The change or loss in larval weight at this point cannot be used to predict when a strain is no longer useful to the program.
3. The best strains were strains that initially had the highest larval weight.
4. There is an increase in production of eggs/cage during strain domestication.
5. A greater effort should be made to follow the present or future strains.
6. This is the first time speculation has been supported by data in relation to domestication and larval weight and egg production.
7. Analysis should be made comparing previous field tests.
8. Great caution should be taken to preserve records in Tuxtla Gutierrez as they are valuable historic documents.



CONCLUSIONS:

Data was found that showed strain deterioration and/or domestication. The data at this time cannot predict when a strain should be changed.



W. H. Sudlow
Screwworm Chief Staff Officer
International Operations and Screwworm Staff
Veterinary Services



United States
Department of
Agriculture

Agricultural
Research
Service

Southern Region
Oklahoma-Texas
Area

Huck
Screwworm Research
Apartado Postal #544
Tuxtla Gutierrez, Chiapas
Mexico

October 17, 1983

Dr. H. C. Hofmann
Comisión México-Americana para la Erradicación
del Gusano Barrenador del Ganado
Leibnitz No. 20-12o. Piso
Apartado Postal M-2890
06000 Mexico, D. F.

Dear Chris,

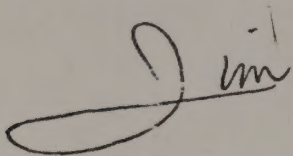
As I promised several months ago, I have put together a list of recommendations/suggestions on swormlure and SWASS use and adult trapping in surveys and field tests. These ideas are the result of information gathered from field work conducted by ARS research scientists. These ideas are not intended to be the final word on these matters, and we expect to periodically update this report as new information becomes available.

Too often decisions in the eradication program are made with poor data or no data at all. Needless to say, this can be a costly practice. Poor data are generally the result of our failure to distinguish between problems based on program execution and problems based on screwworm biology. In regard to swormlure, SWASS, and trapping, the recommendations/suggestions presented herein are intended to help eliminate the variables that contribute to wrong interpretations of biological data or that altogether prevent any interpretation of biological data. Results of surveys and field tests should contain specific and detailed reports on items such as quality of swormlure and SWASS, weather, fly quality, SWASS and fly releases, and so on. This kind of information helps to sort out the variables related to program execution and allows us to concentrate unhindered on the biologically-based problems. Without this information, intelligent decisions about the performance of swormlure and SWASS cannot be made.

Apparent failures of swormlure in the humid tropics have yet to be adequately explained. Theories include poor trap placement, poor trap design, competing odors, weather (high humidity, low air movement), genetics, and physiological and population age structure differences, among others. These theories have been summarized in part in past memos by myself and Dr. Alberto Broce; these memos (Addenda # 1 and # 2) are included for your perusal. Hopefully, these memos will shed additional light on attractant and trapping problems. Dr. O. H. Graham's memo on the use of SWASS in Mexico (Addendum # 3) (cited several times in this report) and the formula and mixing instructions for swormlure-4 (Addendum # 4) are also included.

I hope this report is helpful. Please feel free to contact me anytime you have questions or need further information.

Sincerely,

A handwritten signature in dark ink, appearing to be 'J W Mackley', with a large, stylized initial 'J' and a horizontal line extending to the right.

JAMES W. MACKLEY
Research Entomologist

Encl.

cc:

Moisés Vargas Terán, Sub-Director of Field Operations.
Arturo Martínez y Tapia, Chief of Methods Development.
J. D. Hoffman, Chief of Methods Development.
Charles MacVean, Assistant Entomologist.
R. J. Brenner, Research Entomologist.
R. D. Peterson, Research Entomologist.
René García, Assistant Entomologist.
Lisandro González, Supervisory Technician.
Nazario Pineda, Director of Comisión México-Americana.
R. E. Reichard, Co-Director of Comisión México-Americana.
O. H. Graham, Project Leader
H. E. Brown, Research Leader

